WASTE CHARACTERIZATION ANALYSIS REPORT

Client: Vitco, Inc. P. O. Box 407 Nappanee, IN 46550 Attn: Mr. Brett L. Nordmann	**Sample Description**
Date Sampled: 2-08-88	EIS Analysis No.: 628H
Collected By: Vitco	Composite: 86% Pretreatment Waste
Date Received: 2-17-88	14% Floor Sweepings
Date Forwarded: 4-04-88	
Purchase Order: 10341	

This report presents results of waste characterization through laboratory analysis procedures. The following references were utilized, as needed, in the evaluation procedures herein.

- "Test Methods for the Evaluation of Solid Waste - Physical/Chemical Methods" USEPA SW-846, November 1986, 3rd Edition
- "Methods for Chemical Analysis of Water and Wastes" EPA 600/4-79-020
- State of Indiana "Leaching Methods"

The specific client requested analysis for the samples described above were the following:

EP Toxicity - Metals	✓	State of Indiana Leaching Method	
EP Toxicity - Organics		Volatile Organic Compounds	
Ignitability	✓	Semi-Volatile Organic Compounds	
Corrosivity	✓	(Base/Neutrals Acid Fraction)	
Reactivity	✓	PCB ____ Pesticides	
Additional			

Materials constituting this report packet include laboratory analysis bench sheets. These bench sheets are required by the State of Indiana as an integral part of the Waste Characterization Analysis Report. Certain sections of this report may not pertain to your samples but do constitute a part of the EIS Report Packet. All results are hand entered to eliminate data transfer errors.

Andris Rozite

Andris Rozite, Laboratory Director

RECEIVED APR 06 1988

Rev (12-09-87)

QUALITY ASSURANCE DATA
EP TOXICITY and/or LEACHING METHOD

Parameter	% Recovery - Accuracy		% RSD Precision Analysis
	USEPA EMSL QC Sample	Matrix Spike	
Arsenic *	94.	-	
Barium *	108.9	-	
Cadmium *	101.	-	
Chromium *	106.	-	
Copper	101.6		
Iron			
Lead *	94.1	-	
Manganese			
Mercury *	99.2	-	
Nickel	103.1		
Selenium *	104.6		
Silver *	104.8	-	
Sodium			
Zinc	101.3		
Chlorides			
Cyanide, Total			
Fluoride			
PCB			
pH			
Phenols			
Sulfate			
Sulfide, Total			
TDS			
TOC			
TOH			

* These metals are analyzed by the Method of Standard Additions

REGULATORY LIMITS (ppm)

Parameter	EP Toxicity RCRA	State of Indiana Leaching Method Foundry Waste Types Only A	B	C	D
Arsenic *	5.0	0.05	0.5	1.25	5.0
Barium *	100	1.	10.	25.	100.
Cadmium *	1.0	0.01	0.1	0.25	1.0
Chromium *	5.0	0.05	0.5	1.25	5.0
Lead *	5.0	0.05	0.5	1.25	5.0
Mercury *	0.2	0.002	0.02	0.05	0.2
Selenium *	1.0	0.01	0.1	0.25	1.0
Silver *	5.0	0.05	0.5	1.25	5.0
Chlorides	-	250.	2500.	6250.	**
Copper	-	0.25	2.5	6.25	**
Cyanide, Total	-	0.2	2.	5.	**
Fluoride	-	2.4	24.	60.	**
Iron	-	1.5	15.	**	**
Manganese	-	0.05	0.5	**	**
Nickel	-	0.2	2.	5.	**
PCB	-	-	-	-	-
pH	-	6.0 - 9.0	5 - 10	4 - 11	**
Phenols	-	0.3	3.	7.5	**
Sodium	-	250.	2500.	6250.	**
Sulfate	-	250.	2500.	6250.	**
Sulfide, Total	-	1.	5.	12.5	**
TDS	-	500.	5000.	12500.	**
TOC	-	-	-	-	-
TOH	-	-	-	-	-
Zinc	-	2.5	25.	62.5	**

* Limits shown are based on EP Toxicity Analysis Data

** Testing is not required

ANALYTICAL REPORT SHEET
EP TOXICITY - METALS ANALYSIS

EIS Lab Number	628H			
Client Description	Composite 86% Pretreatment waste 14% Floor Sweepings 2-6-88			
% Solids	100			
Weight Raw Sample (g)	100.1			
Filters Used	AP15			
	HAWP			
Initial Extract pH	9.8			
Final Extract pH (24 hr)	7.2			
Acid Added (24hr)(ml)	400.4			
Final Extract pH (28hr)	—			
Acid Added (4hr)(ml)	—			
Total Acid Added (ml)	400.4			
Total DI Water Added (ml)	1602			
Original Liquid Phase(ml)	0			
Final Extract Volume (ml)	2002.			
RCRA Metals				
Arsenic (PPM)	<0.01			
Barium (PPM)	<0.5			
Cadmium (PPM)	0.05			
Chromium (PPM)	0.06			
Lead (PPM)	<0.2			
Mercury (PPM)	<0.005			
Selenium (PPM)	<0.005			
Silver (PPM)	<0.05			

Note: Tables of pH adjustments with time have been extracted from the EIS sample work sheets and are reproduced in the section of this report containing laboratory bench sheets.

ANALYTICAL REPORT SHEET

ADDITIONAL TESTS PERFORMED ON EP TOXICITY EXTRACT

EIS Lab Number	628 H			
Client Description	86% Pretreatment 14% Floor Sweepings 2-8-89			
Weigh Raw Sample (g)				
Filters Used				
DI Water Added (ml)				
PARAMETERS				
Copper (ppm)	0.04			
Iron (ppm)				
Manganese (ppm)				
Nickel (ppm)	12.7			
Sodium (ppm)				
Zinc (ppm)	1.6			
Chlorides (ppm)				
Cyanide, Total (ppm)				
Fluoride (ppm)				
PCB (ppm)				
Phenols (ppm)				
Sulfate (ppm)				
Sulfide, Total (ppm)				
TDS (ppm)				
TOC (ppm)				
TOH (ppm)				
ph after 24 hours				

Note: The reverse side of this sheet lists reference methods utilized

LEACHING METHOD ANALYTICAL REFERENCES

LEACHATE FORMATION

The leaching procedure utilized, and the equipment employed, is described on the report sheet titled SUPPLEMENTARY DATA EXTRACTION PROCEDURE TOXICITY TEST. The only deviation from the description is that NO PH adjustments were made.

ANALYTICAL METHODS

PARAMETER	SW-846 Method #	EPA 600/4-79-020 Method #
Chlorides		325.3
Copper	3010 / 7210	
Cyanide, Total	9010	
Fluoride		340.2
Iron		236.1
Manganese		243.1
Nickel	3010 / 7520	
PCB	8080	
pH		150.1
Phenols		420.2
Sodium		273.1
Sulfate		374.4
Sulfide, Total	9030	
TDS		160.2
TOC	9060	
TOH	9020	
Zinc	3010 / 7950	

HAZARDOUS CHARACTERISTICS
ANALYTICAL REPORT SHEET

This report sheet presents results of Corrosivity, Ignitability and Reactivity analysis if so required by the client. The following definitions apply to this analysis. The method of analysis is listed on the reverse side of this form.

1. Corrosivity - A solid waste exhibits the characteristic of Corrosivity if it is aqueous and has a pH of less that or equal to 2 (≤) or greater than or equal to 12.5 (≥)

2. Ignitability - A solid waste exhibits the characteristic of ignitability if it is a liquid, other than an aqueous solution, containing less than 24% alcohol by volume, and has a Flash Point less than 140 °F (60 °C)

3. Reactivity - A waste is classified as reactive if it exhibits any of the properties listed in 40 CFR 261.23. The property determined by laboratory analysis is related to the presence of Cyanide and Sulfide. The current USEPA Action level is: Cyanide - 250 mg HCN/kg waste; Sulfide - 500 mg H2S/kg waste

EIS Lab Number	Client Sample Description	Corrosivity (pH)	Ignitability (°F)	Reactivity (mg/kg) As Received	
				Cyanide	Sulfide
628H	86% Pretreatment 14% Floor Sweepings 2-9-88	9.2	>177	1.0	2.0

Rev (11-12-87)

METHOD OF ANALYSIS

The following procedural summaries are provided for clarification. The specific steps involved can be found in the following reference commonly referred to as SW-846: "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", USEPA, SW-846, November 1986, 3rd Edition.

CORROSIVITY (SW-846 Method 9040)

- Liquid Waste (Aqueous) are analyzed directly for pH using a commercial pH meter.
- Solid wastes are analyzed for pH by preparing a 10% W/V solution of the waste in deionized water.

IGNITABILITY (SW-846 Method 1010 or 1020)

The method of analysis consists of heating a sample at a slow, constant rate with continual stirring in a closed cup tester. The Flash Point is defined as the lowest temperature at which a test flame applied to the sample ignites the vapors above the sample.

REACTIVITY (SW-846 Method 9010 - Cyanide and Method 9030 - Sulfide)

- Cyanide is determined by refluxing of the sample under acid conditions with subsequent trapping of HCN gas in a Sodium Hydroxide scrubber. The scrubber contents are then analyzed either by titration or auto analyzer.

- Sulfide is determined by sweeping Hydrogen Sulfide gas out of an acidified sample using a Nitrogen atmosphere. The HS gas is trapped in dual scrubbers containing Zinc Acetate and then analyzed by titration with Sodium Thiosulfate.

METHOD OF STANDARD ADDITIONS

METALS ANALYSIS

It is also possible to analyze a sample by the method of additions and to calculate the results, rather than plotting an analytical curve. The equation to be used for the calculation is shown below. The following three criteria must be met in order for the calculation to be valid:

1. All solutions are made to the same final volume
2. A plot of concentration vs. absorbance is linear over the entire concentration range covered
3. All readings are either in absorbance or in some value directly proportional to absorbance ("concentration")

$$C_s = \frac{C_a \cdot R_s \cdot V_a}{V_s(R_a - R_s)}$$

where C_s = concentration of the element of interest in the original sample solution, in $\mu g/ml$

C_a = concentration of the element of interest in the standard solution used to "spike" the diluted sample solution, in $\mu g/ml$

V_s = volume of original sample solution used, in ml

V_a = Volume of standard solution used, in ml

R_s = reading obtained for diluted sample solution

R_a = reading obtained for "spiked" sample solution

'HOD OF STANDARD ADDITIONS FOR METALS

:IS # 628H

1ETAL Cu DATE 2-24-88 Calibration Std. 5 Absorbance .17 PLATE 125

0.04

Sample (ml)	Water (ml)	Std. (ml)	mg/l added	Result	Calc
3.50	1.50	0.00	0.00	.03	0.0000
3.50	1.00	.50	.50	.52	.0437
3.50	.50	1.00	1.00	1.01	.0437
3.50	0.00	1.50	1.50	1.51	.0436

1ETAL Zn DATE 2-24-88 Calibration Std. 1 Absorbance .108 PLATE 126

1.6

Sample (ml)	Water (ml)	Std. (ml)	mg/l added	Result	Calc
4.00	6.00	0.00	0.00	.64	0.0000
4.00	5.00	1.00	.10	.74	1.5875
4.00	4.00	2.00	.20	.83	1.6282
4.00	3.00	3.00	.30	.93	1.6144

1ETAL Cd DATE 2-24-88 Calibration Std. 2 Absorbance .169 PLATE 127

0.05

Sample (ml)	Water (ml)	Std. (ml)	mg/l added	Result	Calc
3.50	1.50	0.00	0.00	.04	0.0000
3.50	1.00	.50	.20	.26	.0519
3.50	.50	1.00	.40	.45	.0557
3.50	0.00	1.50	.60	.67	.0544

1ETAL Ni DATE 2-24-88 Calibration Std. 2 Absorbance .047 PLATE 128

12.7

Sample (ml)	Water (ml)	Std. (ml)	mg/l added	Result	Calc
3.50	1.50	0.00	0.00	.47	0.0000
3.50	1.00	.50	.20	.67	.6481
3.50	.50	1.00	.40	.88	.6403
3.50	0.00	1.50	.60	1.10	.6327

x20

1ETAL Pb DATE 2-25-88 Calibration Std. 5 Absorbance .034 PLATE 129

<0.2

Sample (ml)	Water (ml)	Std. (ml)	mg/l added	Result	Calc
3.50	1.50	0.00	0.00	.13	0.0000
3.50	1.00	.50	.50	.61	.1935
3.50	.50	1.00	1.00	1.14	.1848
3.50	0.00	1.50	1.50	1.67	.1809

EIS # 628H

1ETAL Cr DATE 2-27-88 Calibration Std. 5 Absorbance .137 PLATE 131

Sample (ml)	Water (ml)	Std. (ml)	mg/l added	Result	Calc
3.50	1.50	0.00	0.00	.04	0.0000
3.50	1.00	.50	.50	.49	.0556
3.50	.50	1.00	1.00	.94	.0552
3.50	0.00	1.50	1.50	1.42	.0542

0.06

1ETAL Ag DATE 3-01-88 Calibration Std. 2 Absorbance .1 PLATE 138

Sample (ml)	Water (ml)	Std. (ml)	mg/l added	Result	Calc
3.50	1.50	0.00	0.00	.02	0.0000
3.50	1.00	.50	.20	.20	.0232
3.50	.50	1.00	.40	.39	.0232
3.50	0.00	1.50	.60	.60	.0220

<0.05

1ETAL Ba DATE 3-02-88 Calibration Std. 20 Absorbance .147 PLATE 140

Sample (ml)	Water (ml)	Std. (ml)	mg/l added	Result	Calc
3.50	1.50	0.00	0.00	.30	0.0000
3.50	1.00	.50	2.00	2.50	.3896
3.50	.50	1.00	4.00	4.53	.4053
3.50	0.00	1.50	6.00	6.66	.4043

<0.5

METHOD OF STANDARD ADDITIONS FOR METALS
One Calibration Standard Used

Se 3-9-88 EIS # 628H Calibration Std. 0.0200 (<0.005)

Sample (ml)	Water (ml)	Std. (ml)	mg/l added	Conc. (mg/l)
4	16	0	0	0
↓	12	4	0.004	0.0018
↓	8	8	0.008	0.0034
↓	4	12	0.012	0.0064

$\frac{.02(.1)4}{4(1.8-0)} = <0.002$

$\frac{.02(.1)8}{4(3.4-0)} = <0.002$

$\frac{.02(.1)12}{4(6.4-0)} = <0.002$

As 3-10-88 EIS # 628H Calibration Std. 0.0200 (<0.01)

Sample (ml)	Water (ml)	Std. (ml)	mg/l added	Conc. (mg/l)
4	16	0	0	0
↓	12	4	0.004	0.0036
↓	8	8	0.008	0.0058
↓	4	12	0.012	0.0107

$\frac{.02(.1)4}{4(3.6-0)} = <0.005$

$\frac{.02(.1)8}{4(5.8-0)} = <0.005$

$\frac{.02(.1)12}{4(10.7-0)} = <0.005$

EIS # Calibration Std.

Sample (ml)	Water (ml)	Std. (ml)	mg/l added	Conc. (mg/l)

EIS # Calibration Std.

Sample (ml)	Water (ml)	Std. (ml)	mg/l added	Conc. (mg/l)

EIS # Calibration Std.

Sample (ml)	Water (ml)	Std. (ml)	mg/l added	Conc. (mg/l)

3-2-88

Mercury Worksheet

Sulfuric Acid (H_2SO_4) 5 11-19-87 Pot. Dichromate ($K_2Cr_2O_7$) —

Nitric Acid (HNO_3) 2.5 12-9 Sod. Cl.-Hydrox. Hydrochloride

Pot. Permanganate ($KMnO_4$) 4.5 2-17-88 .($NaCl\ NH_2OH \cdot HCl$) 4.3 1-20

Pot. Persulfate ($K_2S_2O_8$) 8 2-4-87 Stannous Chloride ($SnCl_2$) 5 2-4

	Bottle #	Sample #	Vol. or Wt.	Result	
1	1	BI		height mm 1	
2	2	BI		0	
3	6	0.05 µg Hg		4	
4	7	0.1 µg Hg		8	
5	9	0.2 µg Hg		17	
6	11	0.3 µg Hg		30	
7	14	0.4 µg Hg		39	
8	16	533H	50 ml	2	
9	21	(L)	50 ml + 0.1 µg Hg	12	
10	22		50 ml + 0.2 µg Hg	24	<0.005
11	29		50 ml + 0.3 µg Hg	34	
12	31	543H	50 ml	1	
13	32	(L)	50 ml + 0.1 µg Hg	11	<0.005
14	33		50 ml + 0.2 µg Hg	21	
15	35		50 ml + 0.3 µg Hg	35	
16	44	544H	100 ml	2	<0.0005
17	45	545H	100 ml	2	<0.0005
18	48	546H	100 ml	2	<0.0005
19	83	547H	100 ml	5	0.0006
20	86	WS378-4	100 ml	15	0.00159 99.2% Rec

actual = 0.0016

95% C.I. = 0.0011 - 0.0021

COMMENTS _____

3-2-00 cont.

Mercury Worksheet

Sulfuric Acid (H_2SO_4) _____ Pot. Dichromate ($K_2Cr_2O_7$) _____

Nitric Acid (HNO_3) _____ Sod. Cl.-Hydrox. Hydrochloride

Pot. Permanganate ($KMnO_4$) _____ .($NaCl\ NH_2OH \cdot HCl$) _____

Pot. Persulfate ($K_2S_2O_8$) _____ Stannous Chloride ($SnCl_2$) _____

	Bottle #	Sample #	Vol. or Wt.	Result	
1	100	548H	100 ml	~~height mm~~ 4	<0.0005
2	105	549H	100ml	3	<0.0005
3	105	549H Dup	100ml	3.5	<0.0005
4	113	574H	25ml	2	
5	114	580H	50ml	2	
6	118	(L)	50ml +0.1ug Hg	9	<0.005
7	129		50ml +0.2ug Hg	21	
8	133		50ml +0.3ug Hg	32	
9	141	600H	50ml	5	
10	176	(L)	50ml +0.1ug Hg	14	
11	179		50ml +0.2ug Hg	25	
12	182		50ml +0.3ug Hg	37	
13	184	628H	50ml	1	
14	217	(L)	50ml +0.1ug Hg	10	<0.005
15	233		50ml +0.2ug Hg	19	
16	238		50ml +0.3ug Hg	32	
17	244	530H	10 ↑ 10 1	5	~~.563~~
18	250	530H	5	18	.379
19	263	511H	1 ml	1	
20	270	511H	1ml + 0.3ug Hg	4	

COMMENTS _____

Analysis Date 2-19-88 Analyst MW

P-XYLENE READINGS

Trial #	Observed Value C (F)	Barometric Pressure (mmHg)	Corrected Flash Point C (F)	Average Value Corrected Flash C (F)	Quality Control Limit
1	81°	731	82.7°	82.2°	26.2 - 27.8 Centigrade
2	80°	732	81.7°		79.2 - 82.5 Fahrenheit

SAMPLE ANALYSIS

EIS Lab #	Sample Type L=Liquid S=Solid	Observed Value C (F)	Barometric Pressure (mm Hg)	Corrected Flash Point C (F)	Comments and/or Precision data
5731	L	171°	735	172.5°	
6281	S	> 175°	730	> 176.8°	

CALCULATION FOR CORRECTED FLASH POINT

- Using °F and mm Hg — CORRECTED FLASH = (Observed Value) + [0.06 (760 − Barometric Pressure)]
- Using °C and mm Hg — CORRECTED FLASH = (Observed Value) + [0.033 (760 − Barometric Pressure)]

HAZARDOUS WASTE FILTRATION

Date 2/18-19/88 Analyst CW EIS# 628#

2. Sample & Date Vitco, Inc

3. Description of Sample: 86% Pretreatment waste 14% Floor Sweepings

4. Type of Analysis: Metals X Organics _____ Other _____

5. Wt. of raw sample used for first separation (100 gm. minimum) 102.1

6.

Filters Used	Weight (gm.)	Filters Used	Weight (gm.)	
HAWP				202.9
AP15				102.8
				100.1

7. TOTAL WEIGHT _____ + _____ = _____

8. Total weight of solid material and filters after filtration _____

9. - Less tare weight of filters used (line 7) _____

10. = Actual weight of material for extraction 100.1

11. If the solid residue on the filters is less than 0.5% of the original weight of the waste, the residue can be discarded and treat the liquid phase as the extract. $\frac{\text{Result from line 10}}{\text{Weight from line 5}}$ $\frac{(\quad)}{(\quad)}$ X 100 = ____

12. If the result from the formula in 11 is greater than 0.5% solids, you must go. through extraction. The total amount of distilled water to be used in transferring material to the extractor and which is to be used in the extraction is obtained by the following formula:

Weight from line 10 (100.1) X 16 = 1602

13. The total amount of 0.5N Acetic acid which can be used in pH adjustment is obtained by the following formula:

Weight from line 10 (100.1) X 4 = 400.4

With residue and distilled water in extraction container (glass Must be used if organics are to be analysed - line 4) agitate and measure pH. If pH is greater than 5.0 decrease to 5.0 $\pm$ 0.2 by adding 0.5N acetic acid.

628H

HAZARDOUS WASTE FILTRATION

The pH of the solution should be adjusted at 15, 30 and 60 minute intervals, moving to the next longer interval if the pH does not have to be adjusted more than 0.5 pH units to bring it to 5.0 ± 0.2. This adjustment Must be carried on for AT LEAST 6 HOURS. This time will be longer if the sample is still changing by more than 0.5 pH units at 60 minute or less time intervals. Adjust pH only when it rises above 5.2

400.4

Clock time	Time Interval	pH	Adjusted pH	Acid Added (ml.)
9:30	.25	9.8	4.8	140.4
10:13		7.9	5.8	260

Final pH 7.2 Total Acid Added 400.4

If at the end of the 24hr. extraction period the pH of the solution is not below 5.2 and the maximum amt. of acid has not been added (line 13) the pH should be adjusted to 5.0 ± 0.2 and the extraction continued for an additional FOUR hours, during which the pH will be adjusted at one hour intervals.

Clock Time	Time Interval	pH	Adjusted pH	Acid Added (ml.)

628 H

HAZARDOUS WASTE FILTRATION

19. Final results if additional extraction time was dictated by Step 18 Final pH _____ Total Acid Added (ml) 400.4

20. At the end of the 24 hour extraction period, distilled water should be added to the extractor in the amount determined by the following equation:

V = [(20)(W)-16(W)]-A

V = [(20)(100.1)-16(100.1)]-(400.4) = 0

V = ml distilled water to be added

W = weight in grams of solid charged to extractor (line 10)

A = ml of 0.5N acetic acid added during extraction (line 17 or 19)

21. This liquid in the extractor is now filtered once again and the liquid obtained is combined with the liquid which was obtained in the first filtration. This combined sample is now ready for analysis.

22. Volume (ml) of liquid from first filtration 0
Total Volume (ml) of DI water added to sample 1602
Total Volume (ml) of acid added to sample (line 19) 400.4
Total Volume (ml) 2002.4

23. Comments: _____

24. Solid Sample Preparation

X 1. Completely sifted through a 9.5 mm standard sieve

_____ 2. A surface area per gram of material equal to or greater than 3.1 square centimeters

_____ 3. Been cut, crushed, or ground to the point where it may pass through a 9.5 mm standard sieve

_____ 4. Been subjected to the Structural Integrity Procedure 3.

25. Paint filter liquids test (Method 9095) if performed.
Free Liquid: YES _____ NO _____

pH METER STANDARDIZATION

ALYST	DATE	TIME	TEMP.	BUFFER USED ACTUAL / READS	BUFFER USED ACTUAL / READS	MODE	RANGE	QC
cw	2-15	8:05	19°	7.0 / 7.0	4.01 / 4.0	N		
cw	2-16	8:00	18°	7.0 / 7.0	4.01 / 4.0	N		
cw	2-18	8:15	18°	7.0 / 7.0	4.01 / 4.0	N		
cw	2-19	11:30	21°	7.0 / 7.0	4.01 / 4.0	N		
cw	2-23-88	8:17	19°	7.0 / 7.0	4.01 / 4.0	N		
cw	2-24-88	8:07	19°	7.0 / 7.0	4.01 / 4.0	N		
cw	2-29-88	2:48	22°	7.0 / 7.0	4.01 / 4.0	N		
cw	3-1-88	3:05	22°	7.0 / 7.0	4.01 / 4.0	N		
cw	3-2-88	8:05	20°	7.0 / 7.0	4.01 / 4.0	N		
cw	3-3-88	11:45	21°	7.0 / 7.0	4.0 / 4.0	N		
cw	3-4-88	5:35	22°	7.0 / 7.0	4.01 / 4.0	N		
cw	3-7-88	8:15	20°	7.0 / 7.0	4.01 / 4.0	N		
cw	3-8-88	9:00	21°	7.0 / 7.0	4.01 / 4.0	N		
cw	3-9-88	8:05	21°	7.0 / 7.0	4.01 / 4.0	N		
cw	3-10-88	8:45	20°	7.0 / 7.0	4.01 / 4.0	N		

SUPPLEMENTARY DATA

EXTRACTION PROCEDURE TOXICITY TEST

1. The extractor used by EIS is shown in Figure 1 attached. The extractor meets the specifications of Method 1310, SW-846 "TEST METHODS FOR EVALUATING SOLID WASTE/PHYSICAL CHEMICAL METHODS" 2nd Edition, July 1982.

2. The filtration apparatus utilized by EIS is a positive pressure unit purchased from Millipore Corporation. The unit is Model No. YT30 142 HW and is rated at 100psi maximum inlet pressure. Nitrogen gas is used as the pressure source. All sample contact surfaces are Teflon coated.

3. Filters utilized in the test procedure are purchased from Millipore Corporation. The specific filters utilized in this analysis are shown on the Analytical Report Sheet.

4. Test procedure used to form the leachate are exactly per specifications in Method 1310, SW-846. Measurement of pH is performed manually using a Fisher Accumet Model 420 pH Meter. Bench sheets showing pH adjustments with time are available for inspection at EIS. Samples are screened through a 3/8 inch sieve prior to filtration.

5. Metals analysis is performed using a Perkin-Elmer 560 Atomic Absorption Spectrophotometer for all metals except Mercury. Analysis of Mercury is performed using cold vapor technique on a dedicated Jarrell Ash Model No. 280 Atomsorb. Peripheral attachments for the 560 AA include Graphite Furnace with Auto Sampler, Hydride Generator and Auto Sampler for Flame Absorption.

6. All metals reported for EP Toxicity Analysis are analyzed by METHOD OF STANDARD ADDITIONS. This method is utilized after the extract has been digested per digestion procedures specified in SW-846.

7. The EIS data handling consists of calibrating the Atomic Absorption unit in terms of concentration values. Check standards are then analyzed along with samples. Output from the AA is hard copied by an Okidata 82A Microline Printer. Numerous client results are thus present on a single printer sheet. Subsequent submissions of bench type sheets to a client are made by manually extracting Method of Standard Additions data on to separate sheets.

8. The following SW-846 procedures were employed in this analysis.

Digestion Procedure

	Acid/ Flame	Acid/ Furnace	Acid/ Hydride	Cold Vapor	Other
As		7060	(7061)		
Ba	(3010)	3020			
Cd	(3010)	3020			
Cr	(3010)	3020			
Pb	(3010)	3020			
Hg				(7470)	
Se		7740	(7741)		
Ag	(7760)	7761			

Analysis Procedure

Flame	Furnace	Hydride	Cold Vapor
	7060	(7061)	
(7080)	7081		
(7130)	7131		
(7190)	7191		
(7420)	7421		
			(7470)
	7740	(7741)	
(7760)	7761		

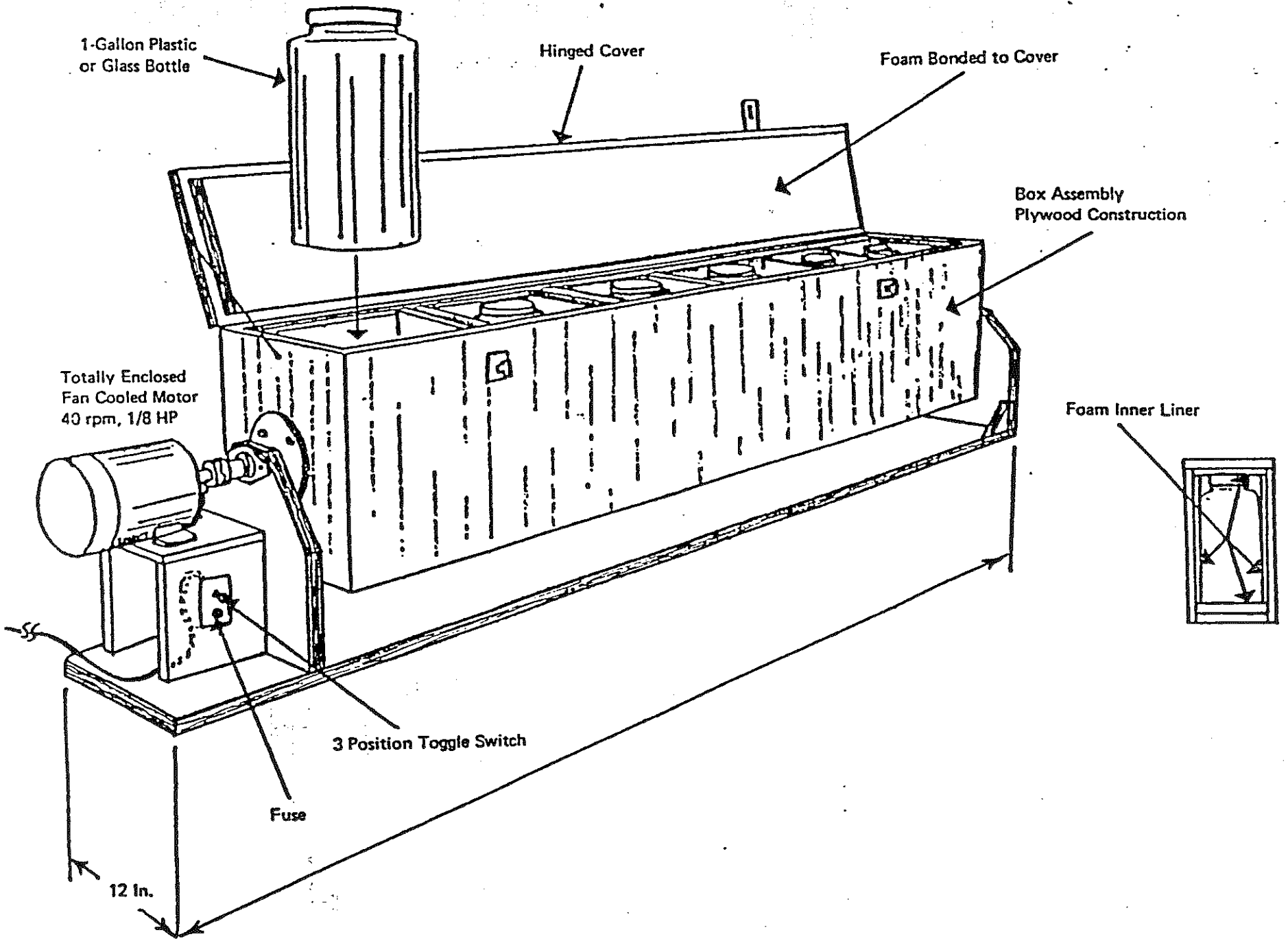

FIGURE 1
EXTRACTOR USED BY EIS INC

VITCO, INC.
P. O. BOX 407, NAPPANEE, INDIANA 46550
PHONE: 219-773-3181

September 21, 1987

Julie Tepe
Prairie View Landfill
15505 Shively Road
Wyatt, Indiana 46595

Dear Julie,

Please have the composite sample of porcelain enamel overspray and pretreatment waste collected 9-18-87 analyzed as soon as possible so we may begin disposal at your site. We have already been granted approval for disposal by the State of Indiana.

I have also enclosed a copy of the letter I sent to Sandy Jordan, IDEM, that explains the high and low levels of cadmium in the analysis of our composite samples in the past. The letter also explains how I intend to keep these levels of metals at a minimum in the waste destined for disposal at Prairie View.

Again, I hope this sample can be analyzed as soon as possible. Your cooperation thus far has been greatly appreciated ! Please feel free to call me if you have any questions (219/773-3181).

Sincerely,

VITCO, INC.

Brett L. Nordmann

Brett L. Nordmann
Ceramic Engineer

BLN/vlc

cc : Len Micinski

enclosure

EIS ENVIRONMENTAL ENGINEERS, INC.
1701 North Ironwood Drive • South Bend, Indiana 46635 • 219/277-5715

WASTE CLASSIFICATION ANALYSIS REPORT

Client: Vitco ATTN: Date Sampled: Date Received: 7-21-87 Date Forwarded: 7-28-87 Purchase Order: 84900	Sample Description EIS Analysis No.: 2311G-2312G 2311G - Composite of Pretreatment Waste #1 2312G - Composite of Pretreatment Waste #2

This report presents results of waste classification through laboratory analysis procedures. The following references were utilized, as needed, in the evaluation procedures herein.

- "Test Methods for the Evaluation of Solid Waste - Physical/Chemical Methods" USEPA SW-846, July 1982, 2nd Edition
- "Methods for Chemical Analysis of Water and Wastes" EPA 600/4-79-020
- State of Indiana "Leaching Method"

The specific client requested analysis for the samples described above were the following.

EP Toxicity - Metals	X	State of Indiana Leaching Method	____
EP Toxicity - Organics	____	Volatile Organic Compounds	____
Ignitability	____	Semi-volatile Organic Compounds (Base/Neutrals Acid Fraction)	____
Corrosivity	____		
Reactivity	____	PCB ____ Pesticides	____
Additional	____		

Materials constituting this report packet include laboratory analysis bench sheets. These bench sheets are required by the State of Indiana as an integral part of the Waste Classification Analysis Report. Certain sections of this report may not pertain to your samples but do constitute a part of the EIS Report Packet. All results are hand entered to eliminate data transfer errors.

Andris Rozite

Andris Rozite, Laboratory Director

RECEIVED JUL 30 1987

QUALITY ASSURANCE DATA
EP TOXICITY and/or LEACHING METHOD

Parameter	% Recovery - Accuracy		% RSD Precision Analysis
	USEPA EMSL QC Sample	Matrix Spike	
Arsenic *		-	
Barium *		-	
Cadmium *	103.4	-	0 (2312G)
Chromium *		-	
Copper			
Iron			
Lead *		-	
Manganese			
Mercury *		-	
Nickel			
Selenium *			
Silver *		-	
Sodium			
Zinc			
Chlorides			
Cyanide, Total			
Fluoride			
PCB			
pH			
Phenols			
Sulfate			
Sulfide, Total			
TDS			
TOC			
TOH			

* These metals are analyzed by the Method of Standard Additions

REGULATORY LIMITS (ppm)

Parameter	EP Toxicity RCRA	State of Indiana Leaching Method Foundry Waste Types Only A	B	C	D
Arsenic *	5.0	0.05	0.5	1.25	5.0
Barium *	100	1.	10.	25.	100.
Cadmium *	1.0	0.01	0.1	0.25	1.0
Chromium *	5.0	0.05	0.5	1.25	5.0
Lead *	5.0	0.05	0.5	1.25	5.0
Mercury *	0.2	0.002	0.02	0.05	0.2
Selenium *	1.0	0.01	0.1	0.25	1.0
Silver *	5.0	0.05	0.5	1.25	5.0
Chlorides	-	250.	2500.	6250.	**
Copper	-	0.25	2.5	6.25	**
Cyanide, Total	-	0.2	2.	5.	**
Fluoride	-	2.4	24.	60.	**
Iron	-	1.5	15.	**	**
Manganese	-	0.05	0.5	**	**
Nickel	-	0.2	2.	5.	**
PCB	-	-	-	-	-
pH	-	6.0 - 9.0	5 - 10	4 - 11	**
Phenols	-	0.3	3.	7.5	**
Sodium	-	250.	2500.	6250.	**
Sulfate	-	250.	2500.	6250.	**
Sulfide, Total	-	1.	5.	12.5	**
TDS	-	500.	5000.	12500.	**
TOC	-	-	-	-	-
TOH	-	-	-	-	-
Zinc	-	2.5	25.	62.5	**

* Limits shown are based on EP Toxicity Analysis Data

** Testing is not required

ANALYTICAL REPORT SHEET
EP TOXICITY - METALS ANALYSIS

EIS Lab Number	23116	23126		
Client Description	Composite of Pretreatment waste #1	Composite of Pretreatment waste #2		
% Solids	NO FREE LIQUID	100		
Weight Raw Sample (g)	100.3	102.4		
Filters Used	AP15	AP15		
	HAWP	HAWP		
Initial Extract pH	10.7	10.6		
Final Extract pH (24 hr)	8.8	8.8		
Acid Added (24hr)(ml)	401.2	409.6		
Final Extract pH (28hr)	—	—		
Acid Added (4hr)(ml)	—	—		
Total Acid Added (ml)	401.2	409.6		
Total DI Water Added (ml)	1605.	1638.		
Original Liquid Phase(ml)	0	0		
Final Extract Volume (ml)	2006.2	2047.6		
RCRA Metals				
Arsenic (PPM)				
Barium (PPM)				
Cadmium (PPM)	<0.05	<0.05		
Chromium (PPM)				
Lead (PPM)				
Mercury (PPM)				
Selenium (PPM)				
Silver (PPM)				

Note: Tables of pH adjustments with time have been extracted from the EIS sample work sheets and are reproduced in the section of this report containing laboratory bench sheets.

SENDER: Comp[illegible]tems 1 and 2 when additional services are desired, a[illegible]mplete it
Put your address in t[illegible] RETURN TO" space on the reverse side. Failure to do this will pr
card from being returned to you. The return receipt fee will provide you the name of the p
delivered to and the date of delivery. For additional fees the following services are available
postmaster for fees and check box(es) for additional service(s) requested.
1. ☐ Show to whom delivered, date, and addressee's address. 2. ☐ Restricted Deliv

3. Article Addressed to:
Sandy Jordon
Dept. of Environmental Management
Solid + ~~Hazardous~~ Hazardous Waste Management Branch
105 S. Meridian Street
Indianapolis, IN 46225

4. Article Number
P29 995 756

Type of Service:
☐ Registered
☒ Certified
☐ Express Mail
☐ [illegible]
☐ [illegible]

Always obtain signature of ad
agent and DATE DELIVERE

5. Signature — Addressee
X

8. Addressee's Address (ONL
requested and fee paid)

6. Signature — Agent
X V. Wardlow

7. Date of Delivery
AUG 03 1987

PS Form 3811, Feb. 1986 DOMESTIC RETUF

RECEIPT
NO INSUR[illegible]
NOT F[illegible]

Sandy Jordon
Dept. of Environmental Manageme
Solid + Hazardous Waste Management Br
105 S Meridian
Indianapolis, IN 46225

73
.75

.70

July

Via

San
Dep
Sol
105 South Meridian Street
Indianapolis, IN 46225

Dear Sandy,

I have enclosed a copy of the laboratory report of two samples of pretreatment waste which you requested an analysis for cadmium under EP toxicity. The results show the levels of cadmium in both samples to be well below the RCRA limitation.

Please complete the approval of our special waste application at your earliest convenience. Once completed, please send all relevent information, permits, etc., to Robert Koehl, President, VITCO, Inc.

Your prompt attention will be greatly appreciated.

Sincerely,

VITCO, Inc.

Brett L. Nordmann

Brett L. Nordmann
Ceramic Engineer

BLN/nkn

cc: Robert Koehl, VITCO, Inc.

enclosure

HAZARDOUS WASTE FILTRATION

1. Date 3-5/3-6-87 Analyst CB EIS# 653 C

2. Sample & Date Vitco Inc 2-12-87

3. Description of Sample: Sample C Floor Sweepings (SAW DUST & P.E. overspray)

4. Type of Analysis: Metals _____ Organics _____ Other _____

5. Wt. of raw sample used for first separation (100 gm. minimum) 101.3

6.

Filters Used	Weight (gm.)	Filters Used	Weight (gm.)
HAWP			
APIS			
DRY			

204.0
102.7
101.3

7. TOTAL WEIGHT _____ + _____ = _____

8. Total weight of solid material and filters after filtration _____

9. \- Less tare weight of filters used (line 7) _____

10. = Actual weight of material for extraction _____

11. If the solid residue on the filters is less than 0.5% of the original weight of the waste, the residue can be discarded and treat the liquid phase as the extract. $\frac{\text{Result from line 10}}{\text{Weight from line 5}}$ $\frac{(\quad)}{(\quad)} \times 100 =$ ____

12. If the result from the formula in 11 is greater than 0.5% solids, you must go through extraction. The total amount of distilled water to be used in transferring material to the extractor and which is to be used in the extraction is obtained by the following formula:

Weight from line 10 (101.3) X 16 = 1621 ✓

13. The total amount of 0.5N Acetic acid which can be used in pH adjustment is obtained by the following formula:

Weight from line 10 (101.3) X 4 = 405.2

14. With residue and distilled water in extraction container (glass Must be used if organics are to be analysed - line 4) agitate and measure pH. If pH is greater than 5.0 decrease to 5.0 $\pm$ 0.2 by adding 0.5N acetic acid.

H. ARDOUS WASTE FILTRATION

The pH of the solution should be adjusted at 15, 30 and 60 minute intervals, moving to the next longer interval if the pH does not have to be adjusted more than 0.5 pH units to bring it to 5.0 ± 0.2. This adjustment Must be carried on for AT LEAST 6 HOURS. This time will be longer if the sample is still changing by more than 0.5 pH units at 60 minute or less time intervals. Adjust pH only when it rises above 5.2

16.

Clock time	Time Interval	pH	Adjusted pH	Acid Added (ml.)		
8:37	0.25	8.8	5.1	35.1		405.2
9:09	0.25	6.1	5.0	25.0	60.1	370.1
9:37	.5.0	5.5	5.0	13.1	73.2	345.1
10:15	1.0	5.4	5.0	14.0	87.2	332.0
11:25	1.0	5.3	5.0	25.0	112.2	318.0
12:30	1.0	6.1	—	—		293.0
1:34	1.0	5.1	—	—		
2:38	1.0	5.2	—	—		
3:45	18.0	5.2	—	—		

17. Final pH 5.5 (OFF AT 9:45) Total Acid Added 112.2

18. If at the end of the 24hr. extraction period the pH of the solution is not below 5.2 and the maximum amt. of acid has not been added (line 13) the pH should be adjusted to 5.0 ± 0.2 and the extraction continued for an additional FOUR hours, during which the pH will be adjusted at one hour intervals.

Clock Time	Time Interval	pH	Adjusted pH	Acid Added (ml.)		
9:55	1.0	5.5	5.0	31.0	143.2	293.0
10:58	1.0	5.0	—	—		262.0
12:05	1.0	5.05	—	—		
:08	1.0	5.05	—	—		

HAZARDOUS WASTE FILTRATION

19. Final results if additional extraction time was dictated by Step 18 Final pH 5.1 Total Acid added (ml) 143.2

20. At the end of the 24 hour extraction period, distilled water should be added to the extractor in the amount determined by the following equation:

$V = [(20)(W) - 16(W)] - A$

$V = [(20)(\underline{101.3}) - 16(\underline{101.3})] - (\underline{143.2}) = \underline{262}$ ✓

V = ml distilled water to be added

W = weight in grams of solid charged to extractor (line 10)

A = ml of 0.5N acetic acid added during extraction (line 17 or 19)

21. This liquid in the extractor is now filtered once again and the liquid obtained is combined with the liquid which was obtained in the first filtration. This combined sample is now ready for analysis.

22. Volume (ml) of liquid from first filtration ~~———~~
Total Volume (ml) of DI water added to sample 1883
Total Volume (ml) of acid added to sample (Line 19) 143.2

23. COMMENTS: _____

24. Solid Sample Preparation

✓ 1. Completely sifted through a 9.5 mm standard sieve

____ 2. A surface area per gram of material equal to or greater than 3.1 square centimeters

____ 3. Been cut, crushed, or ground to the point where it may pass through a 9.5 mm standard sieve

____ 4. Been subjected to the Structural Integrity Procedure 3.

HAZARDOUS WASTE FILTRATION

Date 3-5/3-6-87 Analyst CB EIS# 6546

2. Sample & Date Vitco Inc. 2-12-87

3. Description of Sample: Sample D Solid Paint Waste (Filters & Paint overspra

4. Type of Analysis: Metals _____ Organics _____ Other _____

5. Wt. of raw sample used for first separation (100 gm. minimum) 101.5

6.

Filters Used	Weight (gm.)	Filters Used	Weight (gm.)
HAWP			
API5			
DR4			

201.4
99.9
101.5

7. TOTAL WEIGHT _____ + _____ = _____

8. Total weight of solid material and filters after filtration _____

9. - Less tare weight of filters used (line 7) _____

10. = Actual weight of material for extraction _____

11. If the solid residue on the filters is less than 0.5% of the original weight of the waste, the residue can be discarded and treat the liquid phase as the extract. $\frac{\text{Result from line 10}}{\text{Weight from line 5}}$ $\frac{(\quad)}{(\quad)} \times 100 =$ _____

12. If the result from the formula in 11 is greater than 0.5% solids, you must go through extraction. The total amount of distilled water to be used in transferring material to the extractor and which is to be used in the extraction is obtained by the following formula:

Weight from line 10 (101.5) X 16 = 1624

13. The total amount of 0.5N Acetic acid which can be used in pH adjustment is obtained by the following formula:

Weight from line 10 (101.5) X 4 = 406.0

14. With residue and distilled water in extraction container (glass Must be used if organics are to be analysed - line 4) agitate and measure pH. If pH is greater than 5.0 decrease to 5.0 $\pm$ 0.2 by adding 0.5N acetic acid.

6546

HAZARDOUS WASTE FILTRATION

The pH of the solution should be adjusted at 15, 30 and 60 minute intervals, moving to the next longer interval if the pH does not have to be adjusted more than 0.5 pH units to bring it to 5.0 ± 0.2. This adjustment Must be carried on for AT LEAST 6 HOURS. This time will be longer if the sample is still changing by more than 0.5 pH units at 60 minute or less time intervals. Adjust pH only when it rises above 5.2

16.

Clock time	Time Interval	pH	Adjusted pH	Acid Added (ml.)		
8:37	0.25	6.1	4.9	2.0		406.0
9:09	0.25	5.9	5.0	2.2	4.2	404.0
9:37	0.50	5.5	4.9	2.8	7.0	401.8
10:15	1.0	5.4	4.9	3.0	10.0	399.0
11:25	1.0	5.5	5.0	5.0	15.0	396.0
12:30	1.0	5.3	4.95	5.0	20.0	391.0
1:34	1.0	5.3	4.9	6.0	26.0	386.0
2:38	1.0	5.2				380.0
3:45	18.0	5.3	4.9	10.0	36.0	370.0

17. Final pH 5.9 (OFF AT 9:45) Total Acid Added 36.0

18. If at the end of the 24hr. extraction period the pH of the solution is not below 5.2 and the maximum amt. of acid has not been added (line 13) the pH should be adjusted to 5.0 ± 0.2 and the extraction continued for an additional FOUR hours, during which the pH will be adjusted at one hour intervals.

Clock Time	Time Interval	pH	Adjusted pH	Acid Added (ml.)		
9:55	1.0	5.9	4.9	20.0	56.0	370.0
10:58	1.0	5.1				350.
12:05	1.0	5.25	5.0	10.0	66.0	340.
1:08	1.0	5.2				

HAZARDOUS WASTE FILTRATION

19. Final results if additional extraction time was dictated by Step 18 Final pH 5.2 Total Acid added (ml) 66.0

20. At the end of the 24 hour extraction period, distilled water should be added to the extractor in the amount determined by the following equation:

$V = [(20)(W) - 16(W)] - A$

$V = [(20)(101.5) - 16(101.5)] - (66.0) = 340$

V = ml distilled water to be added

W = weight in grams of solid charged to extractor (line 10)

A = ml of 0.5N acetic acid added during extraction (line 17 or 19)

21. This liquid in the extractor is now filtered once again and the liquid obtained is combined with the liquid which was obtained in the first filtration. This combined sample is now ready for analysis.

22. Volume (ml) of liquid from first filtration _____
Total Volume (ml) of DI water added to sample 1964
Total Volume (ml) of acid added to sample (Line 19) 66.0

23. COMMENTS: _____

24. Solid Sample Preparation

- ✓ 1. Completely sifted through a 9.5 mm standard sieve
- _____ 2. A surface area per gram of material equal to or greater than 3.1 square centimeters
- _____ 3. Been cut, crushed, or ground to the point where it may pass through a 9.5 mm standard sieve
- _____ 4. Been subjected to the Structural Integrity Procedure 3.

pH METER STANDARDIZATION

ANALYST	DATE	TIME	TEMP.	BUFFER USED ACTUAL / READS	BUFFER USED ACTUAL / READS	MODE	RANGE	QC
CB	2-27-87	8:15	20°	7.0/7.0	4.01/4.0	N		
CB	3-3-87	8:03	20°	7.0/7.0	4.01/4.0	N		
CB	3-4-87	10:12	21°	7.0/7.0	4.01/4.0	N		
CB	3-5-87	7:50	21°	7.0/7.0	4.01/4.0	N		
CB	3-6-87	8:29	20°	7.0/7.0	4.01/4.0	N		
CB	3-11-87	7:56	21°	7.0/7.0	4.01/4.0	N		
CB	3-12-87	8:11	20°	7.0/7.0	4.01/4.0	N		
CB	3-16-87	7:55	20°	7.0/7.0	4.01/4.0	N		
CB	3-17-87	9:37	20°	7.0/7.0	4.01/4.0	N		
CB	3-18-87	8:02	22°	7.0/7.0	4.01/4.0	N		
CB	3-19-87	8:21	21°	7.0/7.0	4.01/4.0	N		
CB	3-20-87	8:08	19°	7.0/7.0	4.01/4.0	N		
CB	3-23-87	8:58	20°	7.0/7.0	4.01/4.0	N		
CB	3-24-87	8:22	21°	7.0/7.0	4.01/4.0	N		
CB	3-30-87	7:58	19°	7.0/7.0	4.01/4.0	N		

SUPPLEMENTARY DATA

EXTRACTION PROCEDURE TOXICITY TEST

1. The extractor used by EIS is shown in Figure 1 attached. The extractor meets the specifications of Method 1310, SW-846 "TEST METHODS FOR EVALUATING SOLID WASTE/PHYSICAL CHEMICAL METHODS" 2nd Edition, July 1982.

2. The filtration apparatus utilized by EIS is a positive pressure unit purchased from Millipore Corporation. The unit is Model No. YT30 142 HW and is rated at 100psi maximum inlet pressure. Nitrogen gas is used as the pressure source. All sample contact surfaces are Teflon coated.

3. Filters utilized in the test procedure are purchased from Millipore Corporation. The specific filters utilized in this analysis are shown on the Analytical Report Sheet.

4. Test procedure used to form the leachate are exactly per specifications in Method 1310, SW-846. Measurement of pH is performed manually using a Fisher Accumet Model 420 pH Meter. Bench sheets showing pH adjustments with time are available for inspection at EIS. Samples are screened through a 3/8 inch sieve prior to filtration.

5. Metals analysis is performed using a Perkin-Elmer 560 Atomic Absorption Spectrophotometer for all metals except Mercury. Analysis of Mercury is performed using cold vapor technique on a dedicated Jarrell Ash Model No. 280 Atomsorb. Peripheral attachments for the 560 AA include Graphite Furnace with Auto Sampler, Hydride Generator and Auto Sampler for Flame Absorption.

6. All metals reported for EP Toxicity Analysis are analyzed by METHOD OF STANDARD ADDITIONS. This method is utilized after the extract has been digested per digestion procedures specified in SW-846.

7. The EIS data handling consists of calibrating the Atomic Absorption unit in terms of concentration values. Check standards are then analyzed along with samples. Output from the AA is hard copied by an Okidata 82A Microline Printer. Numerous client results are thus present on a single printer sheet. Subsequent submissions of bench type sheets to a client are made by manually extracting Method of Standard Additions data on to separate sheets.

8. The following SW-846 procedures were employed in this analysis.

Digestion Procedure

	Acid/ Flame	Acid/ Furnace	Acid/ Hydride	Cold Vapor	Other
As		7060	(7061)		
Ba	(3010)	3020			
Cd	(3010)	3020			
Cr	(3010)	3020			
Pb	(3010)	3020			
Hg				(7470)	
Se		7740	(7741)		
Ag	(7760)	7761			

Analysis Procedure

Flame	Furnace	Hydride	Cold Vapor
	7060	(7061)	
(7080)	7081		
(7130)	7131		
(7190)	7191		
(7420)	7421		
			(7470)
	7740	(7741)	
(7760)	7761		

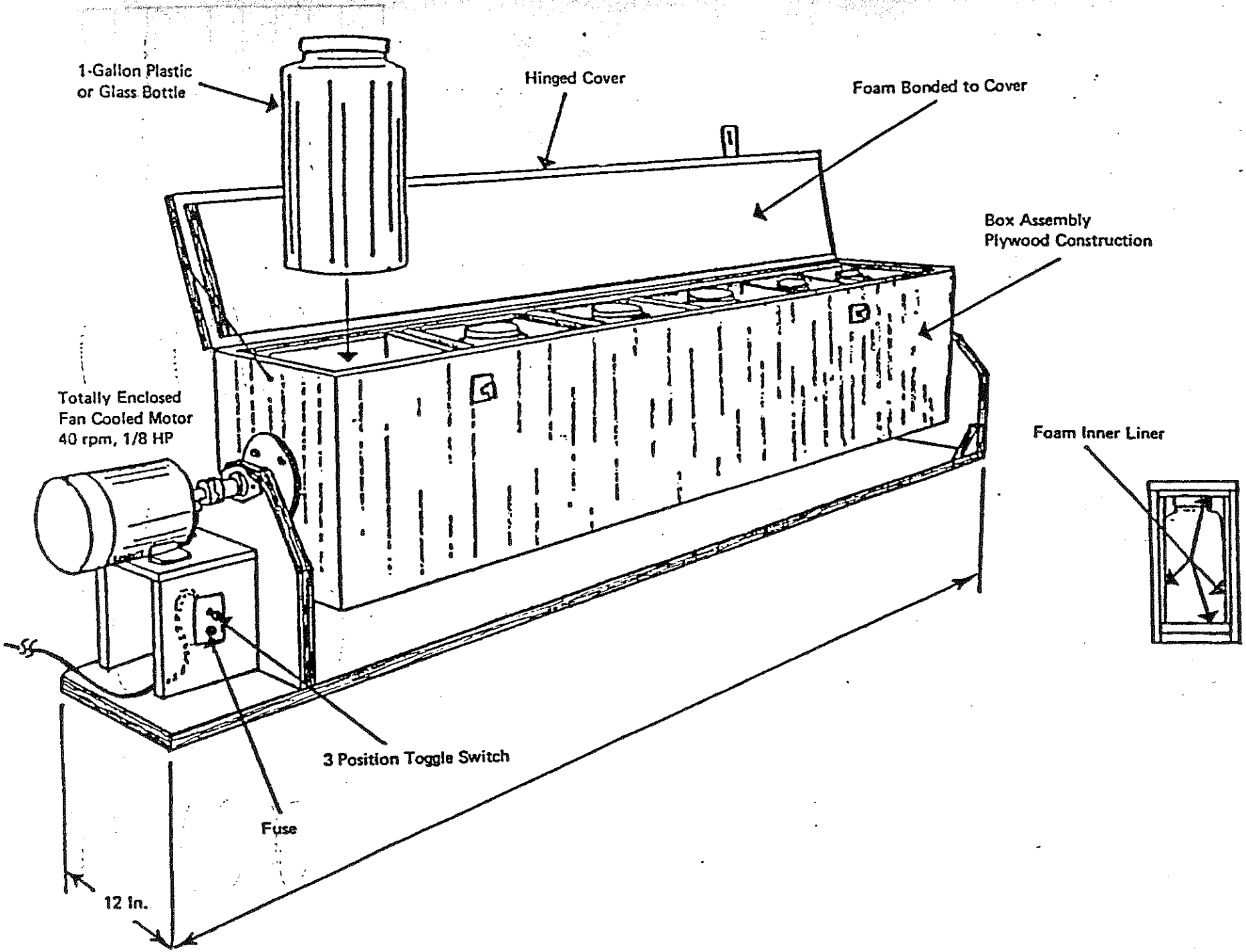

FIGURE 1
EXTRACTOR USED BY EIS I.

EIS ENVIRONMENTAL ENGINEERS, INC.
1701 North Ironwood Drive • South Bend, Indiana 46635 • 219/277-5715

WASTE CLASSIFICATION ANALYSIS REPORT

Client: Vitco, Inc. ATTN: Brett L. Nordmann Date Sampled: Date Received: 3-2-87 Date Forwarded: 4-3-87 Purchase Order: 84607	Sample Description EIS Analysis No.: 651G - 654G 651G - Sample A; Composite of Pretreatment Waste 652G - Sample B; Paper Filter from Production Line 653G - Sample C; Floor Sweepings 654G - Sample D; Solid Paint Waste with Filters & Paint Overspray

This report presents results of waste classification through laboratory analysis procedures. The following references were utilized, as needed, in the evaluation procedures herein.

- "Test Methods for the Evaluation of Solid Waste - Physical/Chemical Methods" USEPA SW-846, July 1982, 2nd Edition
- "Methods for Chemical Analysis of Water and Wastes" EPA 600/4-79-020
- State of Indiana "Leaching Method"

The specific client requested analysis for the samples described above were the following.

EP Toxicity - Metals	X	State of Indiana Leaching Method	
EP Toxicity - Organics		Volatile Organic Compounds	
Ignitability	X	Semi-volatile Organic Compounds (Base/Neutrals Acid Fraction)	
Corrosivity	X		
Reactivity	X	PCB ____ Pesticides	
Additional			

Materials constituting this report packet include laboratory analysis bench sheets. These bench sheets are required by the State of Indiana as an integral part of the Waste Classification Analysis Report. Certain sections of this report may not pertain to your samples but do constitute a part of the EIS Report Packet. All results are hand entered to eliminate data transfer errors.

Andris Rozite

Andris Rozite, Laboratory Director

RECEIVED APR 6 1987

QUALITY ASSURANCE DATA
EP TOXICITY and/or LEACHING METHOD

Parameter	% Recovery - Accuracy		% RSD Precision Analysis
	USEPA EMSL QC Sample	Matrix Spike	
Arsenic *	95.7	-	
Barium *	108.8	-	0 (6526)
Cadmium *	108.	-	2.7 (6526)
Chromium *	99.8	-	0 (6526)
Copper			
Iron			
Lead *	94.	-	0 (6526)
Manganese			
Mercury *	102.2, 120.8	-	
Nickel			
Selenium *	113.8		
Silver *	104.8	-	
Sodium			
Zinc			
Chlorides			
Cyanide, Total			
Fluoride			
PCB			
pH			
Phenols			
Sulfate			
Sulfide, Total			
TDS			
TOC			
TOH			

* These metals are analyzed by the Method of Standard Additions

REGULATORY LIMITS (ppm)

Parameter	EP Toxicity RCRA	State of Indiana Leaching Method Foundry Waste Types Only A	B	C	D
Arsenic *	5.0	0.05	0.5	1.25	5.0
Barium *	100	1.	10.	25.	100.
Cadmium *	1.0	0.01	0.1	0.25	1.0
Chromium *	5.0	0.05	0.5	1.25	5.0
Lead *	5.0	0.05	0.5	1.25	5.0
Mercury *	0.2	0.002	0.02	0.05	0.2
Selenium *	1.0	0.01	0.1	0.25	1.0
Silver *	5.0	0.05	0.5	1.25	5.0
Chlorides	-	250.	2500.	6250.	**
Copper	-	0.25	2.5	6.25	**
Cyanide, Total	-	0.2	2.	5.	**
Fluoride	-	1.4	14.	35.	**
Iron	-	1.5	15.	**	**
Manganese	-	0.05	0.5	**	**
Nickel	-	0.2	2.	5.	**
PCB	-	-	-	-	-
pH	-	6.0 - 9.0	5 - 10	4 - 11	**
Phenols	-	0.3	3.	7.5	**
Sodium	-	250.	2500.	6250.	**
Sulfate	-	250.	2500.	6250.	**
Sulfide, Total	-	-	5.	12.5	**
TDS	-	500.	5000.	12500.	**
TOC	-	-	-	-	-
TOH	-	-	-	-	-
Zinc	-	2.5	25.	62.5	**

* Limits shown are based on EP Toxicity Analysis Data

** Testing is not required

ANALYTICAL REPORT SHEET
EP TOXICITY - METALS ANALYSIS

EIS Lab Number	651 G	652 G	653 G	654 G
Client Description	Sample A Composite of Pretreatment waste	Sample B Paper Filter from Production Line	Sample C Floor Sweepings	Sample D Solid Paint waste with Filters & Paint overspray
% Solids	NO FREE LIQUID	100	100	100
Weight Raw Sample (g)	101.6	101.0	101.3	101.5
Filters Used	AP15	AP15	AP15	AP15
	HAWP	HAWP	HAWP	HAWP
Initial Extract pH	9.4	5.3	8.8	6.1
Final Extract pH (24 hr)	5.6	5.3	5.5	5.9
Acid Added (24hr)(ml)	406.4	2.1	112.2	36.
Final Extract pH (28hr)	—	5.1	5.1	5.2
Acid Added (4hr)(ml)	—	2.	31.	30.
Total Acid Added (ml)	406.4	4.1	143.2	66.
Total DI Water Added (ml)	1626.	2016.	1883.	1964.
Original Liquid Phase(ml)	0	0	0	0
Final Extract Volume (ml)	2032.4	2020.1	2026.2	2030.
RCRA Metals				
Arsenic (PPM)	<0.01	<0.01	0.023	<0.01
Barium (PPM)	<0.5	<0.5	1.0	1.1
Cadmium (PPM)	0.80	0.64	0.19	0.12
Chromium (PPM)	0.07	<0.05	<0.05	<0.05
Lead (PPM)	0.45	<0.2	<0.2	<0.2
Mercury (PPM)	<0.001	<0.001	<0.001	<0.001
Selenium (PPM)	<0.01	<0.01	<0.01	0.01
Silver (PPM)	<0.05	<0.05	<0.05	<0.05

Note: Tables of pH adjustments with time have been extracted from the EIS sample work sheets and are reproduced in the section of this report containing laboratory bench sheets.

ANALYTICAL REPORT SHEET

SUPPLEMENTAL ANALYSIS - HAZARDOUS WASTES

This supplemental report sheet presents results of Corrosivity, Ingitability and Reactivity analysis if so required by the client. The following definitions apply to this analysis. The method of analysis is listed on the reverse side of this form.

1. Corrosivity - A solid waste exhibits the characteristic of Corrosivity if it is aqueous and has a pH of less than (<) or equal to 2 or greater than (>) or equal to 12.5
2. Ignitability - A solid waste exhibits the characteristic of ignitability if it is a liquid, other than an aqueous solution, containing less than 24% alcohol by volume, and has a Flash Point less than 140 °F (60 °C)
3. Reactivity - Per procedures required by the Indiana State Board of Health, Reactivity is evaluated on the basis of Cyanide and Sulfide presence in the sample

* *

EIS Lab Number	Client Sample Description	Corrosivity (pH)	Ignitability (°F)	Reactivity (ppm) *	
				Cyanide	Sulfide
6516	Sample A - Comp. Pretreatment Waste	9.4	> 158.	3.9	6.4
6526	Sample B - Paper Filter, Production	5.1	> 195.	3.9	6.6
6536	Sample C - Floor Sweepings	9.1	NO FLASH - EXTINGUISHES FLAME @ 140	5.8	3.1
6546	Sample D - Solid Paint Waste	6.4	> 198	2.8	2.0
				200 [illegible]	200 limit

* Dry Weight Basis

METHOD OF ANALYSIS

The following procedural summaries are provided for clarification. The specific steps involved can be found in the following reference commonly referred to as SW-846: "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods" USEPA, SW-846, July 1982, 2nd Edition.

CORROSIVITY (SW-846 Method 9040)

- Liquid Waste (aqueous) are analyzed directly for pH using a commercial pH meter.
- Solid wastes are analyzed for pH by preparing a 10% W/V solution of the waste in deionized water.

IGNITABILITY (SW-846 Method 1010 or 1020)

The method of analysis consists of heating a sample at a slow, constant rate with continual stirring in a closed cup tester. The Flash Point is defined as the lowest temperature at which a test flame applied to the sample ignites the vapors above the sample.

REACTIVITY (SW-846 Method 9010 - Cyanide and Method 9030 - Sulfide)

- Cyanide is determined by refluxing of the sample under acid conditions with subsequent trapping of HCN gas in a Sodium Hydroxide scrubber. The scrubber contents are then analyzed either by titration or auto analyzer.
- Sulfide is determined by sweeping Hydrogen Sulfide gas out of an acidified sample using a Nitrogen atmosphere. The HS gas is trapped in dual scrubbers containing Zinc Acetate and then analyzed by titration with Sodium Thiosulfate.

It is also possible to analyze a sample by the method of additions and to calculate the results, rather than plotting an analytical curve. The equation to be used for the calculation is shown below. The following three criteria must be met in order for the calculation to be valid:

1. All solutions are made to the same final volume
2. A plot of concentration vs. absorbance is linear over the entire concentration range covered
3. All readings are either in absorbance or in some value directly proportional to absorbance ("concentration")

$$C_s = \frac{C_a \cdot R_s \cdot V_a}{V_s (R_a - R_s)}$$

where

C_s = concentration of the element of interest in the original sample solution, in µg/ml

C_a = concentration of the element of interest in the standard solution used to "spike" the diluted sample solution, in µg/ml

V_s = volume of original sample solution used, in ml

V_a = volume of standard solution used, in ml

R_s = reading obtained for diluted sample solution

R_a = reading obtained for "spiked" sample solution

THOD OF STANDARD ADDITIONS FOR METALS

IIS # 651G

METAL Ag DATE 3-30-87 Calibration Std. 2 Absorbance .156 PLATE 100

<0.05

Sample (ml)	Water (ml)	Std. (ml)	mg/l added	Result	Calc
3.50	1.50	0.00	0.00	.01	0.0000
3.50	1.00	.50	.20	.22	.0136
3.50	.50	1.00	.40	.41	.0143
3.50	0.00	1.50	.60	.62	.0141

METAL Pb DATE 3-30-87 Calibration Std. 5 Absorbance .046 PLATE 102

0.45

Sample (ml)	Water (ml)	Std. (ml)	mg/l added	Result	Calc
3.50	1.50	0.00	0.00	.27	0.0000
3.50	1.00	.50	.50	.66	.4792
3.50	.50	1.00	1.00	1.09	.4617
3.50	0.00	1.50	1.50	1.66	.4071

METAL Cd DATE 3-20-87 Calibration Std. 2 Absorbance .221 PLATE 85

0.80

Sample (ml)	Water (ml)	Std. (ml)	mg/l added	Result	Calc
3.50	1.50	0.00	0.00	.58	0.0000
3.50	1.00	.50	.20	.80	.7708
3.50	.50	1.00	.40	1.00	.7986
3.50	0.00	1.50	.60	1.19	.8217

METAL Cr DATE 3-23-87 Calibration Std. 5 Absorbance .167 PLATE 92

0.07

Sample (ml)	Water (ml)	Std. (ml)	mg/l added	Result	Calc
3.50	1.50	0.00	0.00	.04	0.0000
3.50	1.00	.50	.50	.45	.0697
3.50	.50	1.00	1.00	.92	.0649
3.50	0.00	1.50	1.50	1.36	.0649

METAL Ba DATE 3-23-87 Calibration Std. 20 Absorbance .124 PLATE 94

<0.5

Sample (ml)	Water (ml)	Std. (ml)	mg/l added	Result	Calc
3.50	1.50	0.00	0.00	.28	0.0000
3.50	1.00	.50	2.00	2.34	.3883
3.50	.50	1.00	4.00	4.45	.3837
3.50	0.00	1.50	6.00	6.29	.3993

HOD OF STANDARD ADDITIONS FOR METALS

IS # 6526

METAL Ag DATE 3-30-87 Calibration Std. 2 Absorbance .156 PLATE 100

<0.05

Sample (ml)	Water (ml)	Std. (ml)	mg/l added	Result	Calc
3.50	1.50	0.00	0.00	.01	0.0000
3.50	1.00	.50	.20	.21	.0143
3.50	.50	1.00	.40	.41	.0143
3.50	0.00	1.50	.60	.62	.0141

METAL Pb DATE 3-30-87 Calibration Std. 5 Absorbance .046 PLATE 102

<0.2

Sample (ml)	Water (ml)	Std. (ml)	mg/l added	Result	Calc
3.50	1.50	0.00	0.00	.05	0.0000
3.50	1.00	.50	.50	.62	.0559
3.50	.50	1.00	1.00	1.11	.0606
3.50	0.00	1.50	1.50	1.45	.0689

0% RSD

METAL Cd DATE 3-20-87 Calibration Std. 2 Absorbance .221 PLATE 85

0.64

Sample (ml)	Water (ml)	Std. (ml)	mg/l added	Result	Calc
3.50	1.50	0.00	0.00	.46	0.0000
3.50	1.00	.50	.20	.67	.6190
3.50	.50	1.00	.40	.87	.6265
3.50	0.00	1.50	.60	1.08	.6240

2.7% RSD

METAL Cr DATE 3-23-87 Calibration Std. 5 Absorbance .167 PLATE 92

<0.05

Sample (ml)	Water (ml)	Std. (ml)	mg/l added	Result	Calc
3.50	1.50	0.00	0.00	0.00	0.0000
3.50	1.00	.50	.50	.51	.0001
3.50	.50	1.00	1.00	1.02	.0001
3.50	0.00	1.50	1.50	1.56	.0001

0% RSD

METAL Ba DATE 3-23-87 Calibration Std. 20 Absorbance .124 PLATE 94

<0.5

Sample (ml)	Water (ml)	Std. (ml)	mg/l added	Result	Calc
3.50	1.50	0.00	0.00	.15	0.0000
3.50	1.00	.50	2.00	2.33	.1966
3.50	.50	1.00	4.00	4.17	.2132
3.50	0.00	1.50	6.00	6.28	.2097

0% RSD

"HOD OF STANDARD ADDITIONS FOR METALS

:IS # 652GDUP

1ETAL Pb DATE 3-30-87 Calibration Std. 5 Absorbance .046 PLATE 102

Sample (ml)	Water (ml)	Std. (ml)	mg/l added	Result	Calc
3.50	1.50	0.00	0.00	.03	0.0000
3.50	1.00	.50	.50	.53	.0354
3.50	.50	1.00	1.00	1.08	.0340
3.50	0.00	1.50	1.50	1.46	.0373

1ETAL Cd DATE 3-20-87 Calibration Std. 2 Absorbance .221 PLATE 85

Sample (ml)	Water (ml)	Std. (ml)	mg/l added	Result	Calc
3.50	1.50	0.00	0.00	.46	0.0000
3.50	1.00	.50	.20	.66	.6740
3.50	.50	1.00	.40	.87	.6411
3.50	0.00	1.50	.60	1.09	.6259

1ETAL Cr DATE 3-23-87 Calibration Std. 5 Absorbance .167 PLATE 92

Sample (ml)	Water (ml)	Std. (ml)	mg/l added	Result	Calc
3.50	1.50	0.00	0.00	0.00	0.0000
3.50	1.00	.50	.50	.50	.0001
3.50	.50	1.00	1.00	1.02	.0001
3.50	0.00	1.50	1.50	1.56	.0001

1ETAL Ba DATE 3-23-87 Calibration Std. 20 Absorbance .124 PLATE 94

Sample (ml)	Water (ml)	Std. (ml)	mg/l added	Result	Calc
3.50	1.50	0.00	0.00	.23	0.0000
3.50	1.00	.50	2.00	2.34	.3114
3.50	.50	1.00	4.00	4.52	.3064
3.50	0.00	1.50	6.00	6.17	.3319

"HOD OF STANDARD ADDITIONS FOR METALS

:IS # 653G

1ETAL Ag DATE 3-30-87 Calibration Std. 2 Absorbance .156 PLATE 100

<0.05

Sample (ml)	Water (ml)	Std. (ml)	mg/l added	Result	Calc
3.50	1.50	0.00	0.00	.01	0.0000
3.50	1.00	.50	.20	.22	.0136
3.50	.50	1.00	.40	.42	.0139
3.50	0.00	1.50	.60	.58	.0150

1ETAL Pb DATE 3-30-87 Calibration Std. 5 Absorbance .046 PLATE 102

<0.2

Sample (ml)	Water (ml)	Std. (ml)	mg/l added	Result	Calc
3.50	1.50	0.00	0.00	0.00	0.0000
3.50	1.00	.50	.50	.44	.0002
3.50	.50	1.00	1.00	.97	.0001
3.50	0.00	1.50	1.50	1.45	.0001

1ETAL Cd DATE 3-20-87 Calibration Std. 2 Absorbance .221 PLATE 85

0.19

Sample (ml)	Water (ml)	Std. (ml)	mg/l added	Result	Calc
3.50	1.50	0.00	0.00	.14	0.0000
3.50	1.00	.50	.20	.35	.1951
3.50	.50	1.00	.40	.55	.1951
3.50	0.00	1.50	.60	.77	.1905

1ETAL Cr DATE 3-23-87 Calibration Std. 5 Absorbance .167 PLATE 92

<0.05

Sample (ml)	Water (ml)	Std. (ml)	mg/l added	Result	Calc
3.50	1.50	0.00	0.00	.02	0.0000
3.50	1.00	.50	.50	.52	.0286
3.50	.50	1.00	1.00	1.05	.0277
3.50	0.00	1.50	1.50	1.56	.0278

1ETAL Ba DATE 3-23-87 Calibration Std. 20 Absorbance .124 PLATE 94

1.0

Sample (ml)	Water (ml)	Std. (ml)	mg/l added	Result	Calc
3.50	1.50	0.00	0.00	.76	0.0000
3.50	1.00	.50	2.00	2.91	1.0100
3.50	.50	1.00	4.00	5.11	.9984
3.50	0.00	1.50	6.00	7.11	1.0259

HOD OF STANDARD ADDITIONS FOR METALS

IS # 654G

ETAL Ag DATE 3-30-87 Calibration Std. 2 Absorbance .156 PLATE 100

<0.05

Sample (ml)	Water (ml)	Std. (ml)	mg/l added	Result	Calc
3.50	1.50	0.00	0.00	.02	0.0000
3.50	1.00	.50	.20	.21	.0301
3.50	.50	1.00	.40	.41	.0293
3.50	0.00	1.50	.60	.61	.0291

ETAL Pb DATE 3-30-87 Calibration Std. 5 Absorbance .046 PLATE 102

<0.2

Sample (ml)	Water (ml)	Std. (ml)	mg/l added	Result	Calc
3.50	1.50	0.00	0.00	.07	0.0000
3.50	1.00	.50	.50	.52	.1111
3.50	.50	1.00	1.00	1.03	.1042
3.50	0.00	1.50	1.50	1.62	.0968

ETAL Cd DATE 3-20-87 Calibration Std. 2 Absorbance .221 PLATE 85

0.12

Sample (ml)	Water (ml)	Std. (ml)	mg/l added	Result	Calc
3.50	1.50	0.00	0.00	.10	0.0000
3.50	1.00	.50	.20	.33	.1180
3.50	.50	1.00	.40	.52	.1293
3.50	0.00	1.50	.60	.75	.1253

ETAL Cr DATE 3-23-87 Calibration Std. 5 Absorbance .167 PLATE 92

<0.05

Sample (ml)	Water (ml)	Std. (ml)	mg/l added	Result	Calc
3.50	1.50	0.00	0.00	.02	0.0000
3.50	1.00	.50	.50	.49	.0304
3.50	.50	1.00	1.00	.99	.0295
3.50	0.00	1.50	1.50	1.46	.0298

ETAL Ba DATE 3-23-87 Calibration Std. 20 Absorbance .124 PLATE 94

1.1

Sample (ml)	Water (ml)	Std. (ml)	mg/l added	Result	Calc
3.50	1.50	0.00	0.00	.83	0.0000
3.50	1.00	.50	2.00	2.93	1.1293
3.50	.50	1.00	4.00	5.00	1.1374
3.50	0.00	1.50	6.00	7.17	1.1221

METHOD OF STANDARD ADDITIONS FOR METALS
One Calibration Standard Used

Se 3-24-87 EIS # 6516 Calibration Std. 0.0200 (<0.01)

Sample (ml)	Water (ml)	Std. (ml)	mg/l added	Conc. (mg/l)	
3	12	0	0	0.0002	$\frac{.02(.2)3}{3(1.8-.2)} = <.005$
	9	3	0.004	0.0018	
	6	6	0.008	0.0049	$\frac{.02(.2)6}{3(4.9-.2)} = <.005$
	3	9	0.012	0.0069	$\frac{.02(.2)9}{3(6.9-.2)} = <.005$

Se 3-24-87 EIS # 6526 Calibration Std. 0.0200 (<0.01)

Sample (ml)	Water (ml)	Std. (ml)	mg/l added	Conc. (mg/l)	
3	12	0	0	0.0006	$\frac{.02(.6)3}{3(6-.6)} = <.005$
	9	3	0.004	0.006	
	6	6	0.008	0.0112	$\frac{.02(.6)6}{3(11.2-.6)} = <.005$
	3	9	0.012	0.0147	$\frac{.02(.6)9}{3(14.7-.6)} = <.005$

Se 3-24-87 EIS # 6536 Calibration Std. 0.0200 (<0.01)

Sample (ml)	Water (ml)	Std. (ml)	mg/l added	Conc. (mg/l)	
3	12	0	0	0.0008	$\frac{.02(.8)3}{3(2.9-.8)} = .0076$
	9	3	0.004	0.0029	
	6	6	0.008	0.0044	$\frac{.02(.8)6}{3(4.4-.8)} < .0089$
	3	9	0.012	0.0056	$\frac{.02(.8)9}{3(5.6-.8)} = .010$

Se 3-24-87 EIS # 6546 Calibration Std. 0.0200 (0.01)

Sample (ml)	Water (ml)	Std. (ml)	mg/l added	Conc. (mg/l)	
3	12	0	0	0.002	$\frac{.02(2)3}{3(6-2)} = .010$
	9	3	0.004	0.006	
	6	6	0.008	0.0104	$\frac{.02(2)6}{3(10.4-2)} = .0095$
	3	9	0.012	0.015	$\frac{.02(2)9}{3(15-2)} = .0092$

_____ EIS # _____ Calibration Std. _____

Sample (ml)	Water (ml)	Std. (ml)	mg/l added	Conc. (mg/l)

METHOD OF STANDARD ADDITIONS FOR METALS
One Calibration Standard Used

As 3-24-87 EIS # 651 G Calibration Std. 0.0200 <0.01

Sample (ml)	Water (ml)	Std. (ml)	mg/l added	Conc. (mg/l)	
4	16	0	0	0.0001	$\frac{.02(.1)4}{4(2.6-.1)} = <.005$
↓	12	4	0.004	0.0026	
	8	8	0.008	0.0069	$\frac{.02(.1)8}{4(6.9-.1)} = <.005$
	4	12	0.012	0.0113	$\frac{.02(.1)12}{4(11.3-.1)} = <.005$

As 3-24-87 EIS # 652G Calibration Std. 0.0200 <0.01

Sample (ml)	Water (ml)	Std. (ml)	mg/l added	Conc. (mg/l)	
4	16	0	0	0.0014	$\frac{.02(1.4)4}{4(4.2-1.4)} = .010$
↓	12	4	0.004	0.0042	
	8	8	0.008	0.0098	$\frac{.02(1.4)8}{4(9.8-1.4)} = .007$
	4	12	0.012	0.0137	$\frac{.02(1.4)12}{4(13.7-1.4)} = .007$

As 3-24-87 EIS # 653 G Calibration Std. 0.0200 0.023

Sample (ml)	Water (ml)	Std. (ml)	mg/l added	Conc. (mg/l)	
4	16	0	0	0.0032	$\frac{.02(3.2)4}{4(5.8-3.2)} = .025$
↓	12	4	0.004	0.0058	
	8	8	0.008	0.0088	$\frac{.02(3.2)8}{4(8.8-3.2)} = .023$
	4	12	0.012	0.0121	$\frac{.02(3.2)12}{4(12.1-3.2)} = .022$

As 3-24-87 EIS # 654 G Calibration Std. 0.0200 <0.01

Sample (ml)	Water (ml)	Std. (ml)	mg/l added	Conc. (mg/l)	
4	16	0	0	0.0012	$\frac{.02(1.2)4}{4(5.1-1.2)} = .006$
↓	12	4	0.004	0.0051	
	8	8	0.008	0.0106	$\frac{.02(1.2)8}{4(10.6-1.2)} = .005$
	4	12	0.012	0.0144	$\frac{.02(1.2)12}{4(14.4-1.2)} = .005$

_____ EIS # _____ Calibration Std. _____

Sample (ml)	Water (ml)	Std. (ml)	mg/l added	Conc. (mg/l)

3-16-87

Mercury Worksheet

Sulfuric Acid (H_2SO_4) 5 3-2

Nitric Acid (HNO_3) 2.5 3-2

Pot. Permanganate ($KMnO_4$) 5 3-9

Pot. Persulfate ($K_2S_2O_8$) 0 3-9

Pot. Dichromate ($K_2Cr_2O_7$) —

Sod. Cl.-Hydrox. Hydrochloride

($NaCl\ NH_2OH \cdot HCl$) 5 3-3

Stannous Chloride ($SnCl_2$) 5 3-2

bring all up to 150 ml

	Bottle #	Sample #	Vol. or Wt.	Result	
				height mm	
1	6	BI		2	
2	7	BI		2.5	
3	14	0.05 µg Hg		8	
4	17	0.1 µg		13	
5	18	0.2 µg		24	
6	21	0.3 µg		37	
7	23	0.4 µg		50	
8	78	171 Ⓒ	100 ml	2.5	
9	82		100 +0.1 µg Hg	13	<0.001
10	84		100 +0.2 µg	27	
11	98		100 +0.3 µg	37	
12	100	395 Ⓒ	100 ml	3	
13	101		100 +0.1 µg Hg	14	<0.001
14	107		100 +0.2 µg	28	
15	116		100 +0.3 µg	44	
16	117	396 Ⓒ	100 ml	2.5	
17	118		100 +0.1 µg Hg	15	<0.001
18	129		100 +0.2 µg	29	
19	141		100 +0.3 µg	42	
20	144	WP016-2	20 ml	38	0.01533 102.2% Rec

act = 0.015

COMMENTS _____

3-16-87 cont.

Mercury Worksheet

Sulfuric Acid (H_2SO_4) 5

Nitric Acid (HNO_3) 2.5

Pot. Permanganate ($KMnO_4$) 5

Pot. Persulfate ($K_2S_2O_8$) 8

Pot. Dichromate ($K_2Cr_2O_7$) —

Sod. Cl.-Hydrox. Hydrochloride

($NaCl\ NH_2OH \cdot HCl$) 5

Stannous Chloride ($SnCl_2$) 5

	Bottle #	Sample #	Vol. or Wt.	Result
				height mm
	171	397 ©	100 ml	3
	176		100 + 0.1 µg Hg	13
	179		100 + 0.2 µg	26
	182		100 + 0.3 µg	38
	183	397 © Dup	100 ml	4
	185		100 + 0.1 µg Hg	14
	191		100 + 0.2 µg	28
	230		100 + 0.3 µg	43
	232	595 ©	100 ml	↑
	233		100 + 0.1 µg Hg	
	238		100 + 0.2 µg	
	241		100 + 0.3 µg	
	244	618 ©	100 ml	3.5
	250		100 ml + 0.1 µg Hg	16
	254		100 ml + 0.2 µg	29
	258		100 ml + 0.3 µg	42
	278	651 ©	100 ml Hg	5
	363		100 + 0.1 µg	16
	365		100 + 0.2 µg	27
	379		100 + 0.3 µg	39

<20.001 0% RSD

<20.001

<20.001

<20.001

COMMENTS _____

3-31-26

Mercury Worksheet

Sulfuric Acid (H_2SO_4) 5 3-2

Nitric Acid (HNO_3) 2.5 3-2

Pot. Permanganate ($KMnO_4$) 5 3-30

Pot. Persulfate ($K_2S_2O_8$) 8 3-9

Pot. Dichromate ($K_2Cr_2O_7$) —

Sod. Cl.-Hydrox. Hydrochloride ($NaCl\ NH_2OH \cdot HCl$) 5 3-24

Stannous Chloride ($SnCl_2$) 5 3-18

	Bottle #	Sample #	Vol. or Wt.	Result		
				height mm		
1	8	B1		0		
2	9	B1		0		
3	11	0.05 µg Hg		4		
4	13	0.1 µg		8.5		
5	16	0.2 µg		17		
6	22	0.3 µg		26		
7	24	0.4 µg		36		
8	29	595G (L)	2ml	6		
9	31		2ml +0.1 µg Hg	12.5		
0	32		2ml +0.2 µg	24	0.022	
1	35		2ml +0.3 µg	36		
2	37	652G (L)	100ml	0.5		
3	44		100ml +0.1 µg Hg	10	<0.001	
4	45		100ml +0.2 µg Hg	18		
5	48		100ml +0.3 µg	29		
6	74	653G (L)	100ml	1.5		
7	83		100ml +0.1 µg Hg	11		
8	86		100ml +0.2 µg	22	<0.001	
9	88		100ml +0.3 µg	34		
10	103	WP016-2	20ml	32	0.0181	120.8% Rec

act = 0.015
95% C.I. = 0.011 - 0.019

COMMENTS

3-31-96
cont.

Mercury Worksheet

Sulfuric Acid (H_2SO_4) 5 3-2

Nitric Acid (HNO_3) 2.5 3-2

Pot. Permanganate ($KMnO_4$) 5 3-30

Pot. Persulfate ($K_2S_2O_8$) 8 3-7

Pot. Dichromate ($K_2Cr_2O_7$) ———

Sod. Cl:-Hydrox. Hydrochloride

($NaCl\ NH_2OH \cdot HCl$) 5 3-24

Stannous Chloride ($SnCl_2$) 5 3-18

Bottle #	Sample #	Vol. or Wt.	Result
			height mm
112	6546 (L)	100 ml	1
113		100 ml + 0.1 µg Hg	12
114		100 ml + 0.2 µg	22
127		100 ml + 0.3 µg	35
133	748 G (L)	100 ml	1
138		100 ml + 0.1 µg Hg	12
169		100 ml + 0.2 µg	21.5
174		100 ml + 0.3 µg	30
187	749 G (L)	100 ml	1
188		100 ml + 0.1 µg Hg	11
189		100 ml + 0.2 µg	23
217		100 ml + 0.3 µg	36
222	749 G (L) DUP	100 ml	0
231		100 ml + 0.1 µg Hg	12
263		100 ml + 0.2 µg	24
363		100 ml + 0.3 µg	37
364	750 G (L)	100 ml	0
372		100 ml + 0.1 µg Hg	12
378		100 ml + 0.2 µg	25
379		100 ml + 0.3 µg	40

< 0.001

< 0.001

< 0.001 0% RSD

< 0.001

< 0.001

COMMENTS _____

SOLID SAMPLE CYANIDE WORK SHEET

Date	EIS Lab Number	Wet Weight Information			Liquidy Volume	% M	Sulfide in Scrubber	Analysis Information			Cyanide (ppm)*
		Final	Initial	Net				Scrubber Vol Titrated	ml Titrant (0.00282N)	Auto Analyzer (mg/l)	
MW	Blank	—	—	—	500	—	NP	50	0.15		
3-5-87	471G ④	75.3	65.3	10.0	500	.45	NP	50	0.2		1.48 *
	618G ⑤	85.0	74.3	10.7	500	60.	NP	50	0.35		13.7*
	651G ⑥	83.4	71.0	12.4	500	69.6	NP	50	0.2		3.9*
	171G ⑦	76.6	66.3	10.3	500	.04	NP	50	0.15		< 4.28*
MW	Blank	—	—	—	500	—	NP	50	0.1		
.12-87	653G ⑨	112.1	100.8	11.3	500	9.92	NP	50	0.3		5.77*
	654G ⑩	110.8	100.0	10.8	500	2.16	NP	50	0.2		2.78*
	652G ③	107.7	100.0	7.7	500	1.95	NP	50	0.2		3.89*
	5.0mg/L STD	—	—	—	500	—	NP	50	7.3		Rec 84.0% 4.2mg/L
MW	Blank	—	—	—	500	—	NP	50	0.1		
3-19-87	697G ①	75.7	65.7	10.0	500	.02	NP	50	0.15		1.47 *
	698G ②	75.0	64.9	10.1	500	.02	NP	50	0.15		1.45 *

PENSKY MARTENS CLOSED CUP FLASH POINT LOG

Analysis Date 3-27-87 Analyst MW

P-XYLENE READINGS

Trial #	Observed Value C (F)	Barometric Pressure (mmHg)	Corrected Flash Point C (F)	Average Value Corrected Flash C (F)	Quality Control Limit
1	81°	740	82.2°		26.2 - 27.8 Centigrade
2	79°	740	80.2°	81.2°	79.2 - 82.5 Fahrenheit

SAMPLE ANALYSIS

EIS Lab #	Sample Type L=Liquid S=Solid	Observed Value C (F)	Barometric Pressure (mm Hg)	Corrected Flash Point C (F)	Comments and/or Precision data
651 G	S	>157°	740	>158.2°	
697 G	S	>198°	740	>199.2°	RSD
697 DUP	S	>197	740	>198.2°	0.4 %
652 G	S	>194°	740	>195.2°	
654 G	S	>197°	740	>198.2°	orange flame at 75°

CALCULATION FOR CORRECTED FLASH POINT

- Using °F and mm Hg CORRECTED FLASH = (Observed Value) + [0.06 (760 − Barometric Pressure)]
- Using °C and mm Hg CORRECTED FLASH = (Observed Value) + [0.033 (760 − Barometric Pressure)]

Analysis Date 3-26-87 Analyst MW

P-XYLENE READINGS

Trial #	Observed Value C (F)	Barometric Pressure (mmHg)	Corrected Flash Point C (F)	Average Value Corrected Flash C (F)	Quality Control Limit
1	79°	738	80.3°	80.9°	26.2 - 27.8 Centigrade
2	80°	738	81.3°		79.2 - 82.5 Fahrenheit

SAMPLE ANALYSIS

EIS Lab #	Sample Type L=Liquid S=Solid	Observed Value C (F)	Barometric Pressure (mm Hg)	Corrected Flash Point C (F)	Comments and/or Precision data
6536	S		738		red line at 101° EXTINGUISHES FLAME AT 140° TAKEN TO 155°

CALCULATION FOR CORRECTED FLASH POINT

- Using °F and mm Hg CORRECTED FLASH = (Observed Value) + [0.06 (760 - Barometric Pressure)]
- Using °C and mm Hg CORRECTED FLASH = (Observed Value) + [0.033 (760 - Barometric Pressure)]

pH OF SOLID SAMPLES & CORROSIVITY

DATE	ANALYST	TIME	EIS#	SAMPLE APPEARANCE: LIQ.	SAMPLE APPEARANCE: SEMI-LIQ.	SAMPLE APPEARANCE: SOLID	pH MEASUREMENT MADE ON: LIQ.	pH MEASUREMENT MADE ON: 10% W/V SOLUTION	pH MEASUREMENT MADE ON: OTHER (SPECIFY)	pH
2-11-87	CB	1:53	395[6]			✓		✓		9.2
↓	↓	1:57	396[6]			✓		✓		9.4
↓	↓	2:02	397[6]			✓		✓		9.5
2-13-87	CB	10:48	426[6]			✓		✓		12.
↓	CB	10:53	427[6]			✓		✓		10.8
↓	DUPLICATE	ANALYSIS				✓		✓		10.8
2-16-87	CB	3:18	451[6]			✓		✓		6.1
2-18-87	CB	10:38	471[6]			✓		✓		8.8
3-6-87	CB	9:15	618[6]			✓		✓		7.1
↓	↓	9:33	651[6]			✓		✓		9.4
↓	↓	9:20	652[6]			✓		✓		5.1

SPECIAL INSTRUCTIONS FOR CORROSIVITY SAMPLES

1. If sample is liquid or semi-liquid, pH is taken on the as is sample.
2. • If sample is a solid, weigh out 10 grams, place it in a 150 ml. beaker and bring to the 100 ml. beaker mark with DI water
   • Stir the suspension several times during the next hour with a glass stirring rod
   • Sample is placed on a magnetic stirrer and gently stirred while measuring the pH
   • Analysis is complete when the sample has attained a relatively stable reading where pH does not change by more than 0.1 units in 30 seconds

pH OF SOLID SAMPLES & CORROSIVITY

DATE	ANALYST	TIME	EIS#	SAMPLE APPEARANCE: LIQ.	SAMPLE APPEARANCE: SEMI-LIQ.	SAMPLE APPEARANCE: SOLID	pH MEASUREMENT MADE ON: LIQ.	pH MEASUREMENT MADE ON: 10% W/V SOLUTION	pH MEASUREMENT MADE ON: OTHER (SPECIFY)	pH
3-6-87	CB	9:37	653[6]			✓		✓		9.1
↓	↓	9:25	654[6]			✓		✓		6.4
3-14-87	CB	11:30	171[6]			✓		✓		7.9
	CB	12:01	740[6]			✓		✓		9.4
	CB	11:55	748[6]			✓		✓		8.9
	DUPLICATE	ANALYSIS	748[6]			✓		✓		8.8
	CB	11:40	696[6]			✓		✓		7.6
		11:43	697[6]			✓		✓		7.4
		11:46	698[6]			✓		✓		7.4
		11:50	699[6]			✓		✓		7.3
↓	↓	11:57	750[6]			✓		✓		8.6

SPECIAL INSTRUCTIONS FOR CORROSIVITY SAMPLES

1. If sample is liquid or semi-liquid, pH is taken on the as is sample.
2. • If sample is a solid, weigh out 10 grams, place it in a 150 ml. beaker and bring to the 100 ml. beaker mark with DI water
   • Stir the suspension several times during the next hour with a glass stirring rod
   • Sample is placed on a magnetic stirrer and gently stirred while measuring the pH
   • Analysis is complete when the sample has attained a relatively stable reading where pH does not change by more than 0.1 units in 30 seconds

pH METER STANDARDIZATION

ANALYST	DATE	TIME	TEMP.	BUFFER USED ACTUAL / READS	BUFFER USED ACTUAL / READS			QC
CB	2-18-87	3:32	22°	7.41/7.42	4.01/4.01			
MW	2-19-87	9:02	21°	7.41/7.41	10.4/10.39			
CB	2-19-87	11:27	22°	7.41/7.40	4.01/4.01			
CB	2-20-87	2:52	22°	7.41/7.41	4.01/4.01			
JW	2-23-87	12:44	22°	7.41/7.42	10.4 ~~4.01~~/10.39			
MW	2-24-87	10:14	21°	7.41/7.42	10.4/10.38			
CB	2-24-87	4:15	21°	7.41/7.40	4.01/4.01			
CB	2-25-87	4:02	22°	7.41/7.40	4.01/4.01			
JW	2-27-87	2:55	22°	7.41/7.41	4.01/4.01			
MW	3-2-87	10:25	20°	7.41/7.43	10.4/10.40			
CB	3-2-87	12:23	20°	7.41/7.41	4.01/4.00			
CB	3-3-87	10:20	22°	7.41/7.41	4.01/4.01			
CB	3-4-87	1:55	22°	7.41/7.40	4.01/4.01			
CB	3-5-87	2:25	24°	7.41/7.41	4.01/4.01			
CB	3-6-87	8:20	22°	7.41/7.42	4.01/4.01			
CB	3-6-87	9:28	22°	7.41/7.41	10.4/10.40			
JW	3-6-87	10:09	21°	7.41/7.41	4.01/4.01			
CB	3-7-87	10:20	22°	7.41/7.41	4.01/4.00			
DW	3-8-87	10:45	21	7.41/7.41	4.01/4.01			
CB	3-9-87	10:50	22°	7.41/7.41	4.01/4.00			
MW	3-10-87	9:50	20°	7.41/7.43	10.40/10.39			

SULFIDE ANALYSIS WORK SHEET

Date	EIS Lab Number	Solid Sample Preparation: Final WT (g)	Initial Wt (g)	Net Wt (g)	Volume DI (ml)	Analysis Information: Solid Aliquot (ml)(g)	% moist	Liquid Sample (ml)	Iodine (m)	Titrant (ml)	Normal Iodine Titrant	µg S	ppm mg/l S
3-10-87	B1				300				10.0	9.8	0.0245 / 0.0250	0	
	706G				300				10.0	9.6		80	0.26
	171G	242.4	201.2	41.2			0.8		10.0	9.6		80	2.0*
3-11-87	B1				300				10.0	9.8	0.0245 / 0.0250	0	
	651G	247.0	206.3	40.7			69.6		10.0	9.6		80	6.4*
	652G	222.4	210.0	12.4			1.95		10.0	9.6		80	6.6*
	653G	208.6	168.5	40.1			7.92		10.0	9.5		112	3.1*
	654G	241.7	201.5	40.2			2.16		10.0	9.6		80	2.6
	696G	209.3	167.8	41.5			1.2		10.0	9.7		32	0.77*
	697G	247.8	207.4	40.4			0.2		10.0	9.4		160	$\bar{x}$=3.4 24.92 RSD 4.0*
	698G	208.6	168.6	40.0			0.2		10.0	9.6		80	2.0*
3-16-87	699G	251.6	210.2	41.4			0.3		10.0	9.6		80	1.9*

* ppm dry

HAZARDOUS WASTE FILTRATION

Date 3-5/3-6-87 Analyst CB EIS# 6516

2. Sample & Date Vitco Inc. 2-12-87

3. Description of Sample: Sample A Composite of Pretreatment Waste

4. Type of Analysis: Metals _____ Organics _____ Other _____

5. Wt. of raw sample used for first separation (100 gm. minimum) 101.6

6.

Filters Used	Weight (gm.)	Filters Used	Weight (gm.)
HAWP			
APIS			
NO FREE LIQUID			

211.9
110.3
101.6

7. TOTAL WEIGHT _____ + _____ = _____

8. Total weight of solid material and filters after filtration _____

9. - Less tare weight of filters used (line 7) _____

10. = Actual weight of material for extraction _____

11. If the solid residue on the filters is less than 0.5% of the original weight of the waste, the residue can be discarded and treat the liquid phase as the extract. $\frac{\text{Result from line 10}}{\text{Weight from line 5}}$ ( ) / ( ) X 100 = _____

12. If the result from the formula in 11 is greater than 0.5% solids, you must go through extraction. The total amount of distilled water to be used in transferring material to the extractor and which is to be used in the extraction is obtained by the following formula:

Weight from line 10 (101.6) X 16 = 1626 ✓

13. The total amount of 0.5N Acetic acid which can be used in pH adjustment is obtained by the following formula:

Weight from line 10 (101.6) X 4 = 406.4

14. With residue and distilled water in extraction container (glass Must be used if organics are to be analysed - line 4) agitate and measure pH. If pH is greater than 5.0 decrease to 5.0 $\pm$ 0.2 by adding 0.5N acetic acid.

HAZ OUS WASTE FILTRATION

The pH of the solution should be adjusted at 15, 30 and 60 minute intervals, moving to the next longer interval if the pH does not have to be adjusted more than 0.5 pH units to bring it to 5.0±0.2. This adjustment Must be carried on for AT LEAST 6 HOURS. This time will be longer if the sample is still changing by more than 0.5 pH units at 60 minute or less time intervals. Adjust pH only when it rises above 5.2

Clock time	Time Interval	pH	Adjusted pH	Acid Added (ml.)	
8:37	0.25	9.4	5.0	130.0	406.4
9:09	0.25	8.1	5.0	200.0 330.0	276.4
9:37	23.50	5.8	5.2	76.4 406.4	76.4
					DONE

17. Final pH 5.5 (D/A at 9:45) Total Acid Added 406.4

18. If at the end of the 24hr. extraction period the pH of the solution is not below 5.2 and the maximum amt. of acid has not been added (line 13) the pH should be adjusted to 5.0± 0.2 and the extraction continued for an additional FOUR hours, during which the pH will be adjusted at one hour intervals.

Clock Time	Time Interval	pH	Adjusted pH	Acid Added (ml.)

HAZARDOUS WASTE FILTRATION

19. Final results if additional extraction time was dictated by Step 18 Final pH _____ Total Acid added (ml) 406.4

20. At the end of the 24 hour extraction period, distilled water should be added to the extractor in the amount determined by the following equation:

$V = [(20)(W) - 16(W)] - A$

$V = [(20)(1626) - 16(101.6)] - (406.4) = 0$

V = ml distilled water to be added

W = weight in grams of solid charged to extractor (line 10)

A = ml of 0.5N acetic acid added during extraction (line 17 or 19)

21. This liquid in the extractor is now filtered once again and the liquid obtained is combined with the liquid which was obtained in the first filtration. This combined sample is now ready for analysis.

22. Volume (ml) of liquid from first filtration _____
Total Volume (ml) of DI water added to sample 1626
Total Volume (ml) of acid added to sample (Line 19) 406.4

23. COMMENTS: _____

24. Solid Sample Preparation

✓ 1. Completely sifted through a 9.5 mm standard sieve

_____ 2. A surface area per gram of material equal to or greater than 3.1 square centimeters

_____ 3. Been cut, crushed, or ground to the point where it may pass through a 9.5 mm standard sieve

_____ 4. Been subjected to the Structural Integrity Procedure 3.

HAZARDOUS WASTE FILTRATION

Date 3-5/3-6-87 Analyst CB EIS# 6526

Sample & Date Vitco Inc. 2-12-87 FROM

Description of Sample: Sample B Paper Filter (Production line)

Type of Analysis: Metals _____ Organics _____ Other _____

Wt. of raw sample used for first separation (100 gm. minimum) 102.0

Filters Used	Weight (gm.)	Filters Used	Weight (gm.)
HAWP			
APIS			
DRY			

204.2
103.2
101.0

TOTAL WEIGHT _____ + _____ = _____

Total weight of solid material and filters after filtration _____

\- Less tare weight of filters used (line 7) _____

= Actual weight of material for extraction _____

If the solid residue on the filters is less than 0.5% of the original weight of the waste, the residue can be discarded and treat the liquid phase as the extract. $\frac{\text{Result from line 10}}{\text{Weight from line 5}}$ $\frac{(\quad)}{(\quad)}$ X 100 = ____

If the result from the formula in 11 is greater than 0.5% solids, you must go through extraction. The total amount of distilled water to be used in transferring material to the extractor and which is to be used in the extraction is obtained by the following formula:

Weight from line 10 (101.0) X 16 = 1616 ✓

The total amount of 0.5N Acetic acid which can be used in pH adjustment is obtained by the following formula:

Weight from line 10 (101.0) X 4 = 404.0

With residue and distilled water in extraction container (glass Must be used if organics are to be analysed - line 4) agitate and measure pH. If pH is greater than 5.0 decrease to 5.0 $\pm$ 0.2 by adding 0.5N acetic acid.

6526

HAZA OUS WASTE FILTRATION

e pH of the solution should be adjusted at 15, 30 and 60 minute intervals, moving to the next longer interval if the pH does not have to be adjusted more than 0.5 pH units to bring it to 5.0 ± 0.2. This adjustment Must be carried on for AT LEAST 6 HOURS. This time will be longer if the sample is still changing by more than 0.5 pH units at 60 minute or less time intervals. Adjust pH only when it rises above 5.2

404.0

Clock time	Time Interval	pH	Adjusted pH	Acid Added (ml.)
8:37	0.25	5.3	5.0	2.1
9:09	0.25	5.2	—	—
9:37	0.50	5.2	—	—
10:15	1.0	5.2	—	—
11:25	1.0	5.2	—	—
12:30	1.0	5.2	—	—
1:34	1.0	5.2	—	—
2:38	1.0	5.2	—	—
3:45	18.0	5.2	—	—

401.9

off at 9:46
Final pH 5.3 Total Acid Added 2.1

If at the end of the 24hr. extraction period the pH of the solution is not below 5.2 and the maximum amt. of acid has not been added (line 13) the pH should be adjusted to 5.0 ± 0.2 and the extraction continued for an additional FOUR hours, during which the pH will be adjusted at one hour intervals.

401.9

Clock Time	Time Interval	pH	Adjusted pH	Acid Added (ml.)
9:55	1.0	5.3	5.0	2.0 4.1
10:58	1.0	5.0	—	—
12:05	1.0	5.1	—	—
1:08	1.0	5.1	—	—

399.9

HAZARDOUS WASTE FILTRATION

19. Final results if additional extraction time was dictated by Step 18 Final pH 5.1 Total Acid added (ml) 4.1

20. At the end of the 24 hour extraction period, distilled water should be added to the extractor in the amount determined by the following equation:

$V = [(20)(W) - 16(W)] - A$

$V = [(20)(101.0) - 16(101.0)] - (4.1) = 400$ ✓

V = ml distilled water to be added

W = weight in grams of solid charged to extractor (line 10)

A = ml of 0.5N acetic acid added during extraction (line 17 or 19)

21. This liquid in the extractor is now filtered once again and the liquid obtained is combined with the liquid which was obtained in the first filtration. This combined sample is now ready for analysis.

22. Volume (ml) of liquid from first filtration _____
Total Volume (ml) of DI water added to sample 2016
Total Volume (ml) of acid added to sample (Line 19) 4.1

23. COMMENTS: _____

24. Solid Sample Preparation

_____ 1. Completely sifted through a 9.5 mm standard sieve

_____ 2. A surface area per gram of material equal to or greater than 3.1 square centimeters

✓ 3. Been cut, crushed, or ground to the point where it may pass through a 9.5 mm standard sieve

_____ 4. Been subjected to the Structural Integrity Procedure 3.

VITCO, INC.
P. O. BOX 407, NAPPANEE, INDIANA 46550
PHONE: 219-773-3181

February 27, 1987

Mr. H. Stephen Nye, P.E.
EIS Environmental Engineer, Inc.
1701 North Ironwood Drive
South Bend, Indiana 46635

Dear Steve,

I am sending you four samples of waste streams for analysis of RCRA characteristics of ignitability, corrosivity, reactivity, and EP toxicity. The four samples were collected on February 12, 1987, and are labeled as follows:

Sample A: Composite of Pretreatment Waste
Sample B: Paper Filters from Production Line
Sample C: Floor Sweepings (Sawdust & P.E. Overspray)
Sample D: Solid Paint Waste with Filters & Paint Overspray

Samples A,B,C may have levels of various metals and Sample D may have levels of solvents, particularly xylol.

I am having these samples analyzed by request of Jeff Blankenberger, an inspector for the State of Indiana. I would appreciate the results as soon as possible. We had discussed a fee of $510.00 per sample over the phone. I have a purchase order (number 84607) assigned to this order.

Please call if you have any questions or need any additional information.

Sincerely,

Vitco, Inc.

Brett L. Nordmann

Brett L. Nordmann
Ceramic Engineer

BLN/nkn

cc: Robert Koehl, Vitco, Inc.

EIS ENVIRONMENTAL ENGINEERS, INC.
1701 North Ironwood Drive • South Bend, Indiana 46635 • 219/277-5715

WASTE CLASSIFICATION ANALYSIS REPORT

Client: Vitco, Inc.

ATTN: Brett L. Nordmann
Date Sampled:
Date Received: 3-2-87
Date Forwarded: 4-3-87
Purchase Order: 84607

Sample Description

EIS Analysis No.: 651G - 654G

651G - Sample A; Composite of Pretreatment Waste
652G - Sample B; Paper Filter from Production Line
653G - Sample C; Floor Sweepings
654G - Sample D; Solid Paint Waste with Filters & Paint Overspray

This report presents results of waste classification through laboratory analysis procedures. The following references were utilized, as needed, in the evaluation procedures herein.

- "Test Methods for the Evaluation of Solid Waste - Physical/Chemical Methods" USEPA SW-846, July 1982, 2nd Edition
- "Methods for Chemical Analysis of Water and Wastes" EPA 600/4-79-020
- State of Indiana "Leaching Method"

The specific client requested analysis for the samples described above were the following.

EP Toxicity - Metals	X	State of Indiana Leaching Method	
EP Toxicity - Organics		Volatile Organic Compounds	
Ignitability	X	Semi-volatile Organic Compounds (Base/Neutrals Acid Fraction)	
Corrosivity	X		
Reactivity	X	PCB ____ Pesticides	

Additional _____

Materials constituting this report packet include laboratory analysis bench sheets. These bench sheets are required by the State of Indiana as an integral part of the Waste Classification Analysis Report. Certain sections of this report may not pertain to your samples but do constitute a part of the EIS Report Packet. All results are hand entered to eliminate data transfer errors.

RECEIVED APR 6 1987

Andris Rozite

Andris Rozite, Laboratory Director

QUALITY ASSURANCE DATA
EP TOXICITY and/or LEACHING METHOD

Parameter	% Recovery - Accuracy		% RSD Precision Analysis
	USEPA EMSL QC Sample	Matrix Spike	
Arsenic *	95.7	-	
Barium *	108.8	-	0 (6526)
Cadmium *	108.	-	2.7 (6526)
Chromium *	99.8	-	0 (6526)
Copper			
Iron			
Lead *	94.	-	0 (6526)
Manganese			
Mercury *	102.2, 120.8	-	
Nickel			
Selenium *	113.8		
Silver *	104.8	-	
Sodium			
Zinc			
Chlorides			
Cyanide, Total			
Fluoride			
PCB			
pH			
Phenols			
Sulfate			
Sulfide, Total			
TDS			
TOC			
TOH			

* These metals are analyzed by the Method of Standard Additions

REGULATORY LIMITS (ppm)

Parameter	EP Toxicity RCRA	State of Indiana Leaching Method Foundry Waste Types Only A	B	C	D
Arsenic *	5.0	0.05	0.5	1.25	5.0
Barium *	100	1.	10.	25.	100.
Cadmium *	1.0	0.01	0.1	0.25	1.0
Chromium *	5.0	0.05	0.5	1.25	5.0
Lead *	5.0	0.05	0.5	1.25	5.0
Mercury *	0.2	0.002	0.02	0.05	0.2
Selenium *	1.0	0.01	0.1	0.25	1.0
Silver *	5.0	0.05	0.5	1.25	5.0
Chlorides	-	250.	2500.	6250.	**
Copper	-	0.25	2.5	6.25	**
Cyanide, Total	-	0.2	2.	5.	**
Fluoride	-	1.4	14.	35.	**
Iron	-	1.5	15.	**	**
Manganese	-	0.05	0.5	**	**
Nickel	-	0.2	2.	5.	**
PCB	-	-	-	-	-
pH	-	6.0 - 9.0	5 - 10	4 - 11	**
Phenols	-	0.3	3.	7.5	**
Sodium	-	250.	2500.	6250.	**
Sulfate	-	250.	2500.	6250.	**
Sulfide, Total	-	-	5.	12.5	**
TDS	-	500.	5000.	12500.	**
TOC	-	-	-	-	-
TOH	-	-	-	-	-
Zinc	-	2.5	25.	62.5	**

* Limits shown are based on EP Toxicity Analysis Data

** Testing is not required

ANALYTICAL REPORT SHEET
EP TOXICITY - METALS ANALYSIS

EIS Lab Number		651G	652G	653G	654G
Client Description		Sample A Composite of Pretreatment Waste	Sample B Paper Filter from Production Line	Sample C Floor Sweepings	Sample D Solid Paint waste with Filters & Paint overspray
% Solids		NO FREE LIQUID	100	100	100
Weight Raw Sample (g)		101.6	101.0	101.3	101.5
Filters Used		AP15	AP15	AP15	AP15
		HAWP	HAWP	HAWP	HAWP
Initial Extract pH		9.4	5.3	8.8	6.1
Final Extract pH (24 hr)		5.6	5.3	5.5	5.9
Acid Added (24hr)(ml)		406.4	2.1	112.2	36.
Final Extract pH (28hr)		—	5.1	5.1	5.2
Acid Added (4hr)(ml)		—	2.	31.	30.
Total Acid Added (ml)		406.4	4.1	143.2	66.
Total DI Water Added (ml)		1626.	2016.	1883.	1964.
Original Liquid Phase(ml)		0	0	0	0
Final Extract Volume (ml)		2032.4	2020.1	2026.2	2030.
RCRA Metals					
Arsenic	(PPM)	<0.01	<0.01	0.023	<0.01
Barium	(PPM)	<0.5	<0.5	1.0	1.1
Cadmium	(PPM)	0.80	0.64	0.19	0.12
Chromium	(PPM)	0.07	<0.05	<0.05	<0.05
Lead	(PPM)	0.45	<0.2	<0.2	<0.2
Mercury	(PPM)	<0.001	<0.001	<0.001	<0.001
Selenium	(PPM)	<0.01	<0.01	<0.01	0.01
Silver	(PPM)	<0.05	<0.05	<0.05	<0.05

Note: Tables of pH adjustments with time have been extracted from the EIS sample work sheets and are reproduced in the section of this report containing laboratory bench sheets.

ANALYTICAL REPORT SHEET

SUPPLEMENTAL ANALYSIS - HAZARDOUS WASTES

This supplemental report sheet presents results of Corrosivity, Ingitability and Reactivity analysis if so required by the client. The following definitions apply to this analysis. The method of analysis is listed on the reverse side of this form.

1. Corrosivity - A solid waste exhibits the characteristic of Corrosivity if it is aqueous and has a pH of less than (<) or equal to 2 or greater than (>) or equal to 12.5
2. Ignitability - A solid waste exhibits the characteristic of ignitability if it is a liquid, other than an aqueous solution, containing less than 24% alcohol by volume, and has a Flash Point less than 140 °F (60 °C)
3. Reactivity - Per procedures required by the Indiana State Board of Health, Reactivity is evaluated on the basis of Cyanide and Sulfide presence in the sample

* *

EIS Lab Number	Client Sample Description	Corrosivity (pH)	Ignitability (°F)	Reactivity (ppm)*	
				Cyanide	Sulfide
651G	Sample A - Comp. Pretreatment Waste	9.4	> 158.	3.9	6.4
652G	Sample B - Paper Filter, Production	5.1	> 195.	3.9	6.6
653G	Sample C - Floor Sweepings	9.1	NO FLASH - EXTINGUISHES FLAME @ 140	5.8	3.1
654G	Sample D - Solid Paint Waste	6.4	> 198	2.8	2.0
				700	700

* Dry Weight Basis

D. Corrective Action

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION V

Date: JUN 2 9 1987

Subject: Trip report of Visual Site Inspection (VSI) of VITCO (Formerly Vitreous Steel Products Co.) IND 005081799

From: Herbert Levine, Geologist
Indiana Unit

To: Hak Cho, Chief
Indiana Unit

On June 29, 1987, I made the VSI for VITCO, Nappanee, Indiana. During the inspection I was accompanied by Mr. Brett Nordman representing VITCO.

RCRA FACILITY ASSESSMENT
FOR
VITCO
NAPPANEE, INDIANA
IND005081799

U.S. EPA
REGION V
SOLID WASTE BRANCH
TECHNICAL PROGRAMS SECTION
JUNE 30, 1987

Executive Summary

A RCRA Facility Assessment (RFA) was completed for VITCO, Nappanee, Indiana. The purpose of the RFA was to determine the need for corrective measures from any Solid Waste Management Unit (SWMU). The Hazardous and Solid Waste Amendments (HSWA) of 1984 require all RCRA permits issued after November 8, 1984, to contain provisions requiring corrective measures for all releases of hazardous waste or constituents from any SWMU at a treatment, storage, or disposal facility, regardless of when the waste was placed in such a SWMU. This facility decided to terminate their treatment operation and close its RCRA regulated SWMU before a final permit could be issued. The unit was clean-closed and received certification of closure from IDEM.

The RFA included a Preliminary Review (PR) and a Visual Site Inspection (VSI). A sampling Inspection (SI) was not required because the unit was clean-closed prior to the VSI. Since no other SWMUs exist that require corrective action a RCRA Facility Investigation (RFI) is not required.

I. Introduction

The RCRA RFA has been completed for VITCO at Nappanee, Indiana. The purpose of the RFA was to determine the need for corrective action to address releases from any SWMU. The HSWA of 1984 require all RCRA permits issued after November 8, 1984, to contain provisions requiring corrective measures for a releases of hazardous wastes or constituents thereof.

This RFA includes both a PR and a VSI. The PR included a review of EPA files and a incomplete VSI begun but not completed by Mr. Gregor Weber of U.S. EPA, Technical Program Section, Indiana Unit.

II. General Description

The VITCO facility is located in the town of Nappanne, Indiana. The facility is confined to two buildings; a general manufacturing building and a shop facility locate in another building on site. The general operations at the facility consists of metal forming and porcelain enamel application. The facility mainly applies porcelain paint. Prior to painting, metal parts are cleaned in a pickle-house by dipping in a acid bath. Over spill from this procedure enters a waste-water treatment unit. This unit generates a sludge that is handled as a hazardous waste and is transported off-site for disposal. The water from the waste-water treatment unit is discharged to the city sewer lines.

Observed
Sfc release

III. Solid Waste Management Units

A. Waste-Pile Treatment Unit

This is the only RCRA regulated SWMU at the facility. This unit was clean-closed and has received certification of closure from IDEM.

Discussion:

Visual Inspection revealed that no waste, container or residue remained.

B. Waste-Water Treatment Unit

This unit treats spills that occur in the pickle degreasing house. A collection system collects all waste-water that is directed to the unit. Over-spray dust from the porcelain enamel painting operation is mixed with water and sent to this unit. The waste-water treatment unit generates a sludge that is seperated from the clarified water. The water is discharged to city sewer lines. This procedure is in compliance with the Water Division of IDEM. The sludge is collected and stored for subsequent off-site disposal.

Discussion

Visual inspection revealed that no releases to the environment are occuring or have occurred from this unit.

C. Container Storage

The facility maintains a roll-away bin for storage of sludge generated at the waste-water treatment unit. The bin is removed on a weekly basis for off-site disposal to a regulated facility.

Discussion

The bin is well maintained, has a cover, and is stored on a cement pad. Visual inspection revealed that no releases had occurred.

Conclusion

No further action is required for this facility. The only RCRA regulated unit has been clean-closed and received certification of closure by IDEM. During the VSI no additional SWMUs were observed. The facility will formally request withdrawal of their Part A application. Neither a SI or RFI is required for this facility.

VISUAL SITE INSPECTION
FOR
WASTE MANAGEMENT UNITS

Facility Name	:	VITCO
EPA ID Number	:	IND 005081799
Location	:	Nappanee, Indiana
Inspector	:	Herbert Levine
Title	:	Geologist
Facility Representative	:	Brett Nordman

1. Facility General Description:

VITCO, located in Elkhart County, Indiana is a metal former and enamel porcelain applicator. Metal parts are cleaned in an acid bath and then painted with a enamel procelain paint. The facility applied for a RCRA permit by submittal of a Part A Permit Application. Only one RCRA regulated SWMU existed on site, a waste-pile treatment unit. This has been clean closed and the facility has received cerfitication of closure from IDEM.

II. Site Description:

The facility is located on the out skirts of Nappanre. Adjacent to the facility is farm land. Residential houses are within 1/1/2 mile of the facility. No Part B application was submitted, there fore detailed geologic information is not available.

III. Solid Waste Management Units:

A. The facility had, in the past, operated a waste treatment unit. The facility closed this unit and has received a closure certification from the IDEM. During the VSI this unit was checked and noted to be closed.

B. The facility operates a waste-water treatment unit. This unit receives waste-waters containing porcelain enamel dust and used acids from the pickle house. The waste water is treated with clarified water being discharged to city sewer lines and sludge collected for off-site disposal. The facility is in compliance with the Water Division of IDEM for their discharge. The facility has analysed the sludge and is asking the state to allow classification of the sludge as a special waste since it is not a characteristic waste.

C. The facility maintains a roll-away container to receive sludge from the waste-water treatment unit. This bin is in good condition and is always kept covered. The bin is picked up each week so storage is not longer than 7 days.

IV. General Observations:

There was no visual evidence of a release from any of the SWMUs. The only RCRA regulated unit (waste-pile treatment) has been certified closed.

V. Conclusions:

No corrective action is required for this facility. A RFI is not needed. This facility will formalley request withdrawal of their Part A application.

PRELIMINARYT REVIEW REPORT (PR)
RCRA FACILITY ASSESSMENT (RFA)

Vitco Inc.

1. Facility Name (Vitreous Steel Products Co.)
EPA ID # IND 005081799
Preparer Gregor Weber
Date February 11, 1987

2. General Description of Facility and Processes:

A. Description:

B. Information on Solid Waste Management Units (attach additional sheets as needed):

	Unit	Release (yes/no/unknown/suspected)
i.	container storage	no
ii.	treatment bin. - closed	no
iii.	wastewater treatment unit	no
iv.		
v.		
vi.		
vii.		
viii.		
ix.		
x.		

3. Specific Unit Information (prepare one for each unit):

A. Unit Type: _____ Regulatory Status: _____
Age: _____
Capacity: _____
Period of Operation: _____
Waste Type: _____
Volume: _____
Hazardous Constituents (attach separate sheet): _____

B. Unit Description: _____

Additional Information Needed: _____

C. Monitoring Description (groundwater, surface water, etc.): _____

Additional Information Needed: _____

D. Environmental Setting:

Additional Information Needed:

E. Evidence of Suspected Past or Current Releases: _____

Additional Information Needed: _____

4. Visual Site Inspection (VSI)

A. Specific Objectives: _____

OFFICIAL PHOTOGRAPH
U.S. ENVIRONMENTAL PROTECTION AGENCY

PROJECT/CASE NO: IND 005081799
SUBJECT: Vitco
LOCATION: 900 E. Wabash
CITY: Nappannee COUNTY: Elkhart STATE: IND
DATE: _____ TIME: _____
WEATHER: (SUN) (HAZE) (CLOUDY) (RAIN) (SNOW)
PHOTOGRAPHER (Sig.) - Gregor Weber
WITNESS: _____
CAMERA: NIKON FE 50mm lens
FILM TYPE: 126 ASA: 200 T:1/___ f:___
NEGATIVE LOCATION: _____ FILE #: _____
PROCESSED BY: EPA
PHOTO #: _____ of garbage container

OFFICIAL PHOTOGRAPH
U.S. ENVIRONMENTAL PROTECTION AGENCY

PROJECT/CASE NO: IND005081799
SUBJECT: Vitco
LOCATION: 900 E. Wabash Ave
Nappannee COUNTY: Elkhart STATE: IND
DATE: 2-12 87 TIME: _____
WEATHER: (SUN) (HAZE) (CLOUDY) (RAIN) (SNOW)
PHOTOGRAPHER (Sig.) Gregor G. Weber
WITNESS: _____
CAMERA: NIKON FE 50 mm lens
FILM TYPE: 126 ASA: 200 T:1/___ f:___
NEGATIVE LOCATION: _____ FILE #: _____
PROCESSED BY: EPA
PHOTO #: _____ of garbage Container

OFFICIAL PHOTOGRAPH
U.S. ENVIRONMENTAL PROTECTION AGENCY

PROJECT/CASE NO: IND005081799
SUBJECT: Vitco
LOCATION: 900 E. Wabash
Nappannee CITY: _____ COUNTY: Elkhart STATE: IND
DATE: 2-12 87 TIME: _____
WEATHER: (SUN) (HAZE) (CLOUDY) (RAIN) (SNOW)
PHOTOGRAPHER (Sig.) Gregor Weber
WITNESS: _____
CAMERA: NIKON FE 50mm lens
FILM TYPE: 126 ASA: 200 T:1/___ f:___
NEGATIVE LOCATION: _____ FILE #: _____
PROCESSED BY: EPA
PHOTO #: _____ of hopper

OFFICIAL PHOTOGRAPH
U.S. ENVIRONMENTAL PROTECTION AGENCY

PROJECT/CASE NO: IND 005081799
SUBJECT: Vitco
LOCATION: 900 E. Wabash
Nappanee
CITY: COUNTY: Elkhart STATE: IND
DATE: 2-12-87 TIME:
WEATHER: (SUN) (HAZE) (CLOUDY) (RAIN) (SNOW)
PHOTOGRAPHER (Sig.) - Gregor Weber
WITNESS:
CAMERA: NIKON FG 50 mm lens
FILM TYPE: 126 ASA: 200 T:1/ f:
NEGATIVE LOCATION: FILE #:
PROCESSED BY: - EPA
PHOTO #: of cement pad for hopper

GPO 838-889

OFFICIAL PHOTOGRAPH
U.S. ENVIRONMENTAL PROTECTION AGENCY

PROJECT/CASE NO: IND 005081799
SUBJECT: Vitco
LOCATION: 900 E Wabash
Nappanee
CITY: COUNTY: Elkhart STATE: IND
DATE: 2-12-87 TIME:
WEATHER: (SUN) (HAZE) (CLOUDY) (RAIN) (SNOW)
PHOTOGRAPHER (Sig.) Gregor Weber
WITNESS:
CAMERA: NIKON FG 50 mm lens
FILM TYPE: 126 ASA: 200 T:1/ f:
NEGATIVE LOCATION: FILE #:
PROCESSED BY: EPA
PHOTO #: of sludge hopper

GPO 838-889

OFFICIAL PHOTOGRAPH
U.S. ENVIRONMENTAL PROTECTION AGENCY

PROJECT/CASE NO: Vitco
SUBJECT: IND 005081799
LOCATION: 900 E Wabash
Nappanee
CITY: COUNTY: Elkhart STATE: IND
DATE: 2-12-87 TIME:
WEATHER: (SUN) (HAZE) (CLOUDY) (RAIN) (SNOW)
PHOTOGRAPHER (Sig.) Gregor Weber
WITNESS:
CAMERA: NIKON FG 50 mm lens
FILM TYPE: 126 ASA: 200 T:1/ f:
NEGATIVE LOCATION: FILE #:
PROCESSED BY: EPA
PHOTO #: of above

GPO 838-889

OFFICIAL PHOTOGRAPH
U.S. ENVIRONMENTAL PROTECTION AGENCY

PROJECT/CASE NO: IND 005081799
SUBJECT: Vitco
LOCATION: 900 E. Wabash
CITY: Nappanee COUNTY: Elkhart STATE: IND
DATE: 2-12-87 TIME:
WEATHER: (SUN) (HAZE) (CLOUDY) (RAIN) (SNOW)
PHOTOGRAPHER (Sig.): Gregory Weber
WITNESS:
CAMERA: NIKON FG 50mm lens
FILM TYPE: 126 ASA: 200 T:1/ f:
NEGATIVE LOCATION: FILE #:
PROCESSED BY: EPA
PHOTO #: of waste water treatment

OFFICIAL PHOTOGRAPH
U.S. ENVIRONMENTAL PROTECTION AGENCY

PROJECT/CASE NO: IND 005081799
SUBJECT: Vitco
LOCATION: 900 E. Wabash
CITY: Nappanee COUNTY: Elkhart STATE: IND
DATE: 2-12-87 TIME:
WEATHER: (SUN) (HAZE) (CLOUDY) (RAIN) (SNOW)
PHOTOGRAPHER (Sig.): Gregory Weber
WITNESS:
CAMERA: NIKON FG 50mm lens
FILM TYPE: 126 ASA: 200 T:1/ f:
NEGATIVE LOCATION: FILE #:
PROCESSED BY: EPA
PHOTO #: of control of w.w.

OFFICIAL PHOTOGRAPH
U.S. ENVIRONMENTAL PROTECTION AGENCY

PROJECT/CASE NO: IND 005081799
SUBJECT: Vitco
LOCATION: 900 E. Wabash
CITY: Nappanee COUNTY: Elkhart STATE: IND
DATE: 2-12-87 TIME:
WEATHER: (SUN) (HAZE) (CLOUDY) (RAIN) (SNOW)
PHOTOGRAPHER (Sig.): Gregory Weber
WITNESS:
CAMERA: NIKON FG 50mm lens
FILM TYPE: 126 ASA: 200 T:1/ f:
NEGATIVE LOCATION: FILE #:
PROCESSED BY: EPA
PHOTO #: collection of pit for w.w.

OFFICIAL PHOTOGRAPH
U.S. ENVIRONMENTAL PROTECTION AGENCY

PROJECT/CASE NO: IND 005081799
SUBJECT: Vitco
LOCATION: 900 E. Wabash
CITY: Nappanee COUNTY: Elkhart STATE: IND
DATE: 2-12-87 TIME:
WEATHER: (SUN) (HAZE) (CLOUDY) (RAIN) (SNOW)
PHOTOGRAPHER (Sig.) Gregor Weber
WITNESS:
CAMERA: NIKON FG 50 mm lens
FILM TYPE: 126 ASA 200 T:1/ f:
NEGATIVE LOCATION: FILE #:
PROCESSED BY: EPA
PHOTO #: of caustic-cleaner holding tank

OFFICIAL PHOTOGRAPH
U.S. ENVIRONMENTAL PROTECTION AGENCY

PROJECT/CASE NO: IND 005081799
SUBJECT: Vitco
LOCATION: 900 E Wabash
CITY: Nappanee COUNTY: Elkhart STATE: IND
DATE: 2-12-87 TIME:
WEATHER: (SUN) (HAZE) (CLOUDY) (RAIN) (SNOW)
PHOTOGRAPHER (Sig.) Gregor Weber
WITNESS:
CAMERA: NIKON FG 50 mm lens
FILM TYPE: 126 ASA 200 T:1/ f:
NEGATIVE LOCATION: FILE #:
PROCESSED BY: EPA
PHOTO #: of sludge collector from water treatment

OFFICIAL PHOTOGRAPH
U.S. ENVIRONMENTAL PROTECTION AGENCY

PROJECT/CASE NO: IND 005081799
SUBJECT: Vitco
LOCATION: 900 E. Wabash
CITY: Nappanee COUNTY: Elkhart STATE: IND
DATE: 2-12-87 TIME:
WEATHER: (SUN) (HAZE) (CLOUDY) (RAIN) (SNOW)
PHOTOGRAPHER (Sig.) Gregor Weber
WITNESS:
CAMERA: NIKON FG 50 mm lens
FILM TYPE: 126 ASA 200 T:1/ f:
NEGATIVE LOCATION: FILE #
PROCESSED BY: EPA
PHOTO #: of collector bin

OFFICIAL PHOTOGRAPH
U.S. ENVIRONMENTAL PROTECTION AGENCY

PROJECT/CASE NO: IND005081799
SUBJECT: Vitco
LOCATION: 900 E. Wabash
CITY: Nappannee COUNTY: Elkhart STATE: IND
DATE: 2-12-87 TIME:
WEATHER: (SUN) (HAZE) (CLOUDY) (RAIN) (SNOW)
PHOTOGRAPHER (Sig.) Gregg Weber
WITNESS:
CAMERA: NIKON FG 50 mm lens
FILM TYPE: 126 ASA: 200 T:1/ f:
NEGATIVE LOCATION: FILE #:
PROCESSED BY: EPA
PHOTO #: of hazardous wastes storage now clean

EPO 838-889

OFFICIAL PHOTOGRAPH
U.S. ENVIRONMENTAL PROTECTION AGENCY

PROJECT/CASE NO: IND005081799
SUBJECT: Vitco
LOCATION: 900 E. Wabash
CITY: Nappanee COUNTY: Elkhart STATE: IND
DATE: 2-12-87 TIME:
WEATHER: (SUN) (HAZE) (CLOUDY) (RAIN) (SNOW)
PHOTOGRAPHER (Sig.) Gregg Weber
WITNESS:
CAMERA: NIKON FG 50 mm lens
FILM TYPE: 126 ASA 200 T:1/ f:
NEGATIVE LOCATION: FILE #:
PROCESSED BY: EPA
PHOTO #: of above

EPO 838-

OFFICIAL PHOTOGRAPH
U.S. ENVIRONMENTAL PROTECTION AGENCY

PROJECT/CASE NO: IND005081799
SUBJECT: Vitco
LOCATION: 900 E. Wabash
CITY: Nappanee COUNTY: Elkhart STATE: IND
DATE: 2-12-87 TIME:
WEATHER: (SUN) (HAZE) (CLOUDY) (RAIN) (SNOW)
PHOTOGRAPHER (Sig.) Gregg Weber
WITNESS:
CAMERA: NIKON FG 50 mm lens
FILM TYPE: 126 ASA 200 T:1/ f:
NEGATIVE LOCATION: FILE #
PROCESSED BY: EPA
PHOTO #: of above

EPO 838-888

OFFICIAL PHOTOGRAPH
U.S. ENVIRONMENTAL PROTECTION AGENCY

PROJECT/CASE NO: IND 005081799
SUBJECT: Vitco
LOCATION: 900 E. Wabash
Nappanee CITY: Elkhart COUNTY: IND STATE
DATE: 2-12-87 TIME:
WEATHER: (SUN) (HAZE) (CLOUDY) (RAIN) (SNOW)
PHOTOGRAPHER (Sig.): Gregor Weber
WITNESS:
CAMERA: NIKON FG 50 mm lens
FILM TYPE: 126 ASA 200 T:1/ f:
NEGATIVE LOCATION: FILE #:
PROCESSED BY: EPA
PHOTO #: of fuel oil tanks empty

GPO 838-999

OFFICIAL PHOTOGRAPH
U.S. ENVIRONMENTAL PROTECTION AGENCY

PROJECT/CASE NO: IND 005081799
SUBJECT: Vitco
LOCATION: 900 E. Wabash
Nappanee CITY: Elkhart COUNTY: IND STATE
DATE: 2-12-87 TIME:
WEATHER: (SUN) (HAZE) (CLOUDY) (RAIN) (SNOW)
PHOTOGRAPHER (Sig.): Gregor Weber
WITNESS:
CAMERA: NIKON FG 50 mm lens
FILM TYPE: 126 ASA 200 T:1/ f:
NEGATIVE LOCATION: FILE #:
PROCESSED BY: EPA
PHOTO #: of above

GPO 838-999

OFFICIAL PHOTOGRAPH
U.S. ENVIRONMENTAL PROTECTION AGENCY

PROJECT/CASE NO: IND 005081799
SUBJECT: Vitco
LOCATION: 900 E. Wabash
Nappanee CITY: Elkhart COUNTY: IND STATE
DATE: 2-12-87 TIME:
WEATHER: (SUN) (HAZE) (CLOUDY) (RAIN) (SNOW)
PHOTOGRAPHER (Sig.): Gregor Weber
WITNESS:
CAMERA: NIKON FG 50 mm lens
FILM TYPE: 126 ASA 200 T:1/ f:
NEGATIVE LOCATION: FILE #:
PROCESSED BY: EPA
PHOTO #: of above

GPO 838-999

OFFICIAL PHOTOGRAPH
U.S. ENVIRONMENTAL PROTECTION AGENCY

PROJECT/CASE NO: IND 005081799
SUBJECT: Vitco
LOCATION: 900 E. Wabash
Nappanee
CITY: COUNTY: Elkhart STATE: Ind.
DATE: 2-12-87 TIME:
WEATHER: (SUN) (HAZE) (CLOUDY) (RAIN) (SNOW)
PHOTOGRAPHER (Sig.) Gregory Weber
WITNESS:
CAMERA: NIKON FG 50mm lens
FILM TYPE: 126 ASA: 200 T:1/ f:
NEGATIVE LOCATION: FILE #:
PROCESSED BY: EPA
PHOTO #: of front plant entrance

GPO 835-359

OFFICIAL PHOTOGRAPH
U.S. ENVIRONMENTAL PROTECTION AGENCY

PROJECT/CASE NO: IND 005081799
SUBJECT: Vitco
LOCATION: 900 E. Wabash
Nappanee
CITY: COUNTY: Elkhart STATE: IND
DATE: 2-12-87 TIME:
WEATHER: (SUN) (HAZE) (CLOUDY) (RAIN) (SNOW)
PHOTOGRAPHER (Sig.) Gregory Weber
WITNESS:
CAMERA: NIKON FG 50mm lens
FILM TYPE: 126 ASA: 200 T:1/ f:
NEGATIVE LOCATION: FILE #:
PROCESSED BY: EPA
PHOTO #: of Enamel Dust collector recycled waste

GPO 835-359

OFFICIAL PHOTOGRAPH
U.S. ENVIRONMENTAL PROTECTION AGENCY

PROJECT/CASE NO: IND 005081799
SUBJECT: Vitco
LOCATION: 900 E. Wabash
Nappanee
CITY: COUNTY: Elkhart STATE: IND
DATE: 2-12-87 TIME:
WEATHER: (SUN) (HAZE) (CLOUDY) (RAIN) (SNOW)
PHOTOGRAPHER (Sig.) Gregory Weber
WITNESS:
CAMERA: NIKON FG 50 mm lens
FILM TYPE: 126 ASA: 200 T:1/ f:
NEGATIVE LOCATION: FILE #:
PROCESSED BY: ERA
PHOTO #: of

GPO 835-359

OFFICIAL PHOTOGRAPH
U.S. ENVIRONMENTAL PROTECTION AGENCY

PR. CASE NO: Vitco
SUBJECT: IND 005081799
LOCATION: 900 E. Wabash
Nappannee CITY: COUNTY: Elkhart STATE: IND
DATE: 2-12-87 TIME:
WEATHER: (SUN) (HAZE) (CLOUDY) (RAIN) (SNOW)
PHOTOGRAPHER (Sig.) Gregor Weber
WITNESS:
CAMERA: NIKON FE 50 mm lens
FILM TYPE: 126 ASA: 200 T:1/ f:
NEGATIVE LOCATION: FILE #:
PROCESSED BY: ERA
PHOTO #: of

GPO 838-339

OFFICIAL PHOTOGRAPH
U.S. ENVIRONMENTAL PROTECTION AGENCY

PROJECT/CASE NO: IND 005081799
SUBJECT: Vitco
LOCATION: 900 E. Wabash
Nappannee CITY: COUNTY: Elkhart STATE: IND
DATE: 2-12-87 TIME:
WEATHER: (SUN) (HAZE) (CLOUDY) (RAIN) (SNOW)
PHOTOGRAPHER (Sig.) Gregor Weber
WITNESS:
CAMERA: NIKON FE 50 mm lens
FILM TYPE: 126 ASA: 200 T:1/ f:
NEGATIVE LOCATION: FILE #:
PROCESSED BY: ERA
PHOTO #: of oil tanks

GPO 838-339

4' tubes from enamel dust collector

OFFICIAL PHOTOGRAPH
U.S. ENVIRONMENTAL PROTECTION AGENCY

PROJECT/CASE NO:
SUBJECT:
LOCATION:
CITY: COUNTY: STATE:
DATE: TIME:
WEATHER: (SUN) (HAZE) (CLOUDY) (RAIN) (SNOW)
PHOTOGRAPHER (Sig.)
WITNESS:
CAMERA:
FILM TYPE ASA T:1/ f:
NEGATIVE LOCATION: FILE #
PROCESSED BY:
PHOTO #: of

GPO 838-339

Name of Preparer: Gregor Weber
Date: 02-11-87

Model Facility Management Plan

1. Facility Name: Viteo (Vitreous Steel Products Co.)

2. Facility I.D. Number: IND 005 081 799

3. Owner and/or Operator: Vitreous Steel Prod. Co.

4. Facility Location: 900 East Wabash Ave.
Street Address

Nappanee Elkhart Indiana 46550
City County State Zip Code

5. Facility Telephone (if available): (219) 773 - 3181

6. Interim Status and/or Permitted Hazardous Waste Units and Capacities of Each Unit:

Type of Units	Size or Capacity	Active or Closed
_____ Storage in Tanks or Containers		
_____ Incinerator		
_____ Landfill		
_____ Surface Impoundment		
_____ Waste Pile		
_____ Land Treatment		
_____ Injection Wells		
T04 Others (Specify) (Treatment Bin)	450 liters/day	~~Active~~ Closed

7. Permit Application Status: _____ (HWDMS action item number)

8. Identification of Hazardous Waste Generated, Treated, Stored or Disposed at the Facility: (may attach Part A or permit list or reference those documents if listing of wastes is exceptionally long - in that case, to complete this question list wastes of greatest interest and/or quantity and note that additional wastes are managed)

Type of Waste	Quantity	Generated, Treated, Stored or Disposed (note appropriate categories)
Paint waste EP Toxic (D005, D006)	186 Ton/Year	Generated & Treated

9. Review of Response to Solid Waste Management Questionaire indicates: (check one)

_____ Solid Waste Management Units exist (other than previously identified RCRA units)

_____ No Solid Waste Management Units exist (other than previously identified RCRA units)

ed _____ It is unclear from review of questionaire whether or not any solid Waste Management Units exist

_____ Respondent indicates that does not know if any Solid Waste Management Units exist

10. If the response to question 9 is that Solid Waste Management Units exist, than check one of the following:

_____ Releases of hazardous waste or constituents have occurred or are thought to have occurred

_____ Releases of hazardous waste or constituents have not occurred

_____ Releases of hazardous waste or constituents have occurred or are thought to have occurred but have been adequately remedied

_____ It is not known whether a release of hazardous waste or constituents has occurred

11. The facility is on the National Priorities List or proposed update of the List or ERRIS list

_____ Yes - indicate List or update

_____ No

_____ Yes - ERRIS list

Prior to completion of the Recommendation portion of the Facility Management Plan, the attached Appendix must be completed.

12. Recommendation for Regional Approach to the Facility: Check one

_____ Further Investigation to Evaluate Facility

_____ Permit Compliance Schedule

_____ Corrective Action Order (may include compliance schedule)

_____ Other Administrative Enforcement

_____ Federal Judicial Enforcement

_____ Referral to CERCLA for Federally Financed or Enforcement Activity

_____ Voluntary/Negotiated Action

_____ State Action

Brief narrative in explanation of selection : _____

_____

_____

_____

a) If further investigation alternative is selected:

_____ Site inspection - anticipated inspection date _____

State or Federal inspection _____

_____ Preliminary Assessment - anticipated completion date _____

_____ RI/FS - anticipated date of initiation _____

State/Federal_____

Private Party_____ identify party(ies)

_____

b) If Permit Alternative is Selected: Projected Schedule

Date of Part B Submission: _____

Date of Completeness Check: _____

Date for Additional Submissions (if required): _____

Date of Completion of Technical Review: _____

Completion of Draft Permit/Permit Denial: _____

Public Notice for Permit Decision: _____

Date of Hearing (if appropriate): _____

Date for Final Permit or Denial Issuance: _____

Description of any corrective action provisions to be included in permit -

_____

_____

_____

c) If Corrective Action Order Alternative is Selected:

Estimated Date for Order Issuance: _____

Description of Provisions of the Order to be Completed by Facility: _____

_____

_____

Description of Compliance Schedule to be Contained in Order:

_____

_____

_____

d) If Other Administrative Enforcement Action is Selected:

Projected Date for Issuance of the Order: _____

Description of Provisions or Goals of the Order: _____

_____

_____

e) If Judicial Enforcement Alternative Selected:

Date of Referral to Office of Regional Counsel:_____

f) If Referral to CERCLA for Action Selected:

Date of Referral to CERCLA Sections:_____

g) If Voluntary/Negotiated Action Alternative if Selected:

Date of Initial Contact with Facility:_____

Description of Goals of Contact or Discussions with Facility: _____

_____

_____

_____

Date for Termination of Discussions if Not Successful:

_____

Date of Finalization of Settlement if Negotiation Successful:

_____

h) If State Action Alternative is Selected:

Date for Referral to State:_____

Name of State Contact:_____

Phone: _____

APPENDIX

The questions constituting this Appendix to the Facility Management Plan must be filled out prior to completion of recommendation elements of the Plan. The purpose of this appendix is to provide a summary documentation of the State and/or U.S.EPA review of available information on the subject facility. The intent is that a comprehensive file review will be conducted as the basis for selection of the recommended approach to a given facility. If the Appendix is completed by State personnel questions referring to available data reference information in State files; for Federal personnel the reference is to Federal files. Where questions refer to "all" available data or information and such material is voluminous, the response should indicate that files are voluminous, and then reference most telling information, for example groundwater contaminants found frequently or at extremely high concentrations should be specifically listed, and information most directly supporting recommended approach to facility should be described. If no information is available in facility files, the response should so indicate. It is also anticipated that this Appendix may be updated periodically as more information becomes available.

1. Description of All Available Monitoring Data for Facility:

Type of Data	Date	Author	Summary of Results or Conclusions

2. Description of Enforcement Status:

Type of Action	Date	Local, State or Federal	Result or Status

3. Description of Any Complaints from Public:

Source of Complaint	Date	Recipient	Subject and Response

4. Description of All Inspection Reports for Facility:

Date of Inspection	Inspector (Local, State, Federal)	Conclusions or Comments

5. During inspection of this facility did the inspector note any evidence of past disposal practices not currently regulated under RCRA such as piles of waste or rubbish, injection wells, ponds or surface impoundments that might contain waste or active or inactive landfills?

_____ Yes - give date if inspection and describe observation

_____

_____

_____

_____ No

_____ Don't know

6. Do inspection reports indicate observations of discolored soils or dead vegetation that might be caused by a spill, discharge or disposal of hazardous wastes or constituents?

_____ Yes - indicate date of report and describe observations

_____

_____

_____ No

_____ Don't know

7. Do inspection reports indicate the presence of any tanks at the facility which are located below grade and could possibly leak without being noticed by visual observation?

_____ Yes - date of inspection and describe information in report

_____

_____

_____

_____ No

_____ Don't know

8. Does a groundwater monitoring system exist at the facility? _____

9. If answer to question 8 is yes, is the groundwater system capable of monitoring both regulated RCRA units and other Solid Waste Management Units? _____

Explain - _____

_____

_____

10. Is the groundwater monitoring system in compliance with applicable RCRA groundwater monitoring standards? _____

If no, explain deficiency _____

_____

_____

11. Decribe all information on facility subsurface geology or hydrogeology available.

Type of Information	Author	Date	Summary of Conclusions

12. Did the facility submit a 103(c) notification pursuant to CERCLA?

_____ Yes Date of Notification_____

_____ No

13. If answer to 12 is yes, briefly summarize content of that notification. (waste management units identified, type of waste concerned)

14. Has a CERCLA Preliminary Assessment/Site Investigation (PA/SI) been completed for this facility?

_____ Yes

_____ No

15. If answer to question 14 is yes, briefly describe conclusions of the PA/SI focusing on types of environmental contamination found, wastes and sources of contamination.

16. If available, having reviewed the CERCLA notification, RCRA Part A and RCRA Part B, it appears that: (CERCLA unit refers to unit or area of concern in CERCLA response activity)

_____ RCRA and CERCLA units are same at this facility

_____ RCRA and CERCLA units are clearly different units

_____ There is an overlap between the RCRA and CERCLA units (some are the same, some are different)

17. Description of Any Past Releases or Environmental Contamination:

Type/Source of Release	Date	Material Released	Quantity	Response

18. Identification of Reports or Documentation Concerning Each Release Described in Item 17.

Title/Type of Report	Date	Author	Recipients	Contents

19. Highlight any information gaps in the file - describe any plans to obtain additional needed information.

20. Summary of major environmental problems noted, desired solution and possible approaches.

Problem	Solution	Approach	Pros and Cons

VITREOUS STEEL PRODUCTS COMPANY
900 EAST WABASH AVENUE • NAPPANEE, INDIANA 46550
PHONE (219) 773-3181 • TELEX 25-8351

February 20, 1986

RCRA Activities
Region V
P.O. Box A3587
Chicago, IL 60690

Attention: Atkjg

Gentlemen:

Attached is the certification regarding potential release from solid waste management units.

Yours truly,

VITREOUS STEEL PRODUCTS

John F. Kendall

JFK/nsm

Attachment

CERTIFICATION REGARDING POTENTIAL RELEASES FROM SOLID WASTE MANAGEMENT UNITS

FACILITY NAME: VITREOUS STEEL PRODUCTS COMPANY

EPA I.D. NUMBER: IND 005081799

LOCATION CITY: Nappanee

STATE: Indiana 46550

1. Are there any of the following solid waste management units (existing or closed) at your facility? NOTE - DO NOT INCLUDE HAZARDOUS WASTE UNITS CURRENTLY SHOWN IN YOUR PART A APPLICATION

	YES	NO
° Landfill		X
° Surface Impoundment		X
° Land Farm		X
° Waste Pile		X
° Incinerator		X
° Storage Tank (Above Ground)		X
° Storage Tank (Underground)		X
° Container Storage Area		*
° Injection Wells		X
° Wastewater Treatment Units		*
° Transfer Stations		X
° Waste Recycling Operations		X
° Waste Treatment, Detoxification		X
° Other _____		

2. If there are "Yes" answers to any of the items in Number 1 above, please provide a description of the wastes that were stored, treated or disposed of in each unit. In particular, please focus on whether or not the wastes would be considered as hazardous wastes or hazardous constituents under RCRA. Also include any available data on quantities or volume of wastes disposed of and the dates of disposal. Please also provide a description of each unit and include capacity, dimensions and location at facility. Provide a site plan if available.

* Container storage area - Less than 90 day storage

* Waste water treatment system - Installed 25 Nov. 85 to comply with regulations for point source porcelain enamelers. This system is exempt from treat store and dispose requirements.

NOTE: Hazardous wastes are those identified in 40 CFR 261. Hazardous constituents are those listed in Appendix VIII of 40 CFR Part 261.

RECEIVED JAN 16 1986

3. For the units noted in Number 1 above and also those hazardous waste units in your Part A application, please describe for each unit any data available on any prior or current releases of hazardous wastes or constituents to the environment that may have occurred in the past or may still be occurring.

   Please provide the following information

   a. Date of release
   b. Type of waste released
   c. Quantity or volume of waste released
   d. Describe nature of release (i.e., spill, overflow, ruptured pipe or tank, etc.)

No known releases

4. In regard to the prior or continuing releases described in Number 3 above, please provide (for each unit) any analytical data that may be available which would describe the nature and extent of environmental contamination that exists as a result of such releases. Please focus on concentrations of hazardous wastes or constituents present in contaminated soil or groundwater.

Not applicable

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the submittal is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. (42 U.S.C. 6902 et seq. and 40 CFR 270.11(d))

John F. Kendall - Manager - Engineering
Typed Name and Title

Signature

February 20, 1986
Date

REV 8-1-85

Vitco

Site Investigation Report

1) During the inspection of this facility did the inspector note any evidence of past waste disposal practices not currently regulated under RCRA such as piles of waste or rubbish, ponds or surface impoundments that might contain waste, active or inactive landfills?

_____ a) Yes, Explain _____

_____

_X_ b) No

_____ c) Cannot Respond to this Question

2) Was there any evidence of discolored soils or dead vegetation that might be caused by a spill, discharge or disposal of hazardous wastes or constituents?

_____ a) Yes, Explain _____

_X_ b) No

_____ c) Cannot Respond to this Question

3) Are there any tanks at the facility which are used for waste storage (solid or hazardous) which are located below grade and could possibly leak without being noticed by visual observation?

_X_ a) Yes underground pit for collection of water prior to treatment

_____ b) No

_____ c) Cannot Respond to this Question

4) Based on an inspection or inspections that have been done at this facility there is no reason to question or doubt the information which the applicant has submitted on the questionnaire regarding Solid Waste Management Units and the possibility of prior or continuing releases of hazardous wastes or constituents.

_X_ a) I concur with this statement

_____ b) I do not concur with this statement for the following reasons:

_____

_____

_____

_____

5) If 4(b) was checked,
Describe what additional information or testing is needed to determine if prior or continuing releases of hazardous wastes or constituent have occurred. Specify which units are of concern and what types of releases are suspected (i.e., releases to groundwater, surface water, air, soils, etc).

_____

_____

_____

_____

6) An on site inspection to discuss and evaluate the possibility of prior or continuing releases from Solid Waste Management Units is recommended

____ a) Yes

__X__ b) No

7) Was site sampling for confirmation of suspected releases conducted?

____ a) Yes

__X__ b) No

8) If yes to 7, detail the following:

1) Sampling plan - include locating parameters to be tested. rationale for each parameter, logistics, dates, personnel etc.

2) Analytical results - QA, QC. Result summary conclusion.

9) A Remedial Investigation (R.I.) is needed to evaluate the nature and extent of prior releases of hazardous wastes or constituents from Solid Waste Management Units.

_____ a) Yes

__X__ b) No

10. If the answer to No. 7 above is "Yes", the priority and manner for requiring the applicant to conduct the Remedial Investigation (R.I.) is as follows:

_____ a) Require R.I. in compliance schedule that is part of RCRA permit.

_____ b) Issue Compliance Order requiring R.I. to be done.

11. Did the SI address all items that the PA "Assessment of Unit" forms indicated the SI should address?

yes

12. Based on my review of this S.I. report, it is hereby:

☒ approved

☐ not approved

Signature [signature] Date: 6-29-87
(EPA Staff)

Facility Vitreous Steel

I.D. No. IND 005081799

Page No. A.

SOLID WASTE MANAGEMENT UNITS AND MAJOR SPILLS

Unit or Spill	LOCATION OF INFORMATION						
	Permit Applic	SWMU Questnr	NPDES Files	Enfrcmt Files	CERCLA Files	State Files	Other
1. Container storage	X						RFA File
2. treatment bin - closed	X						RFA File
3. Waste-water treatment	X						RFA File
4.							
5.							
6.							
7.							
8.							
9.							
10.							
11.							
12.							
13.							
14.							
15.							
16.							
17.							
18.							
19.							
20.							
21.							
22.							
23.							

TPS-14 (06/13/86)

Facility VITCO

I.D. No.

Page No. B.

SUBJECT B. GENERAL FACILITY DESCRIPTION

Category	Description	Category	Description
1	LOCATION/SETTING/LAND USE/SIZE	5	OPERATIONAL HISTORY
2	INDUSTRY TYPE	6	REGULATORY STATUS
3	PRODUCTS PRODUCED	7	OTHER
4	RAW MATERIALS	8	

ITEM	CATEGORY	DESCRIPTION/DATES/COMMENTS	LOCATION OF INFORMATION
1	1	Located at 900 E. Walnut Ave	Part A
		Rappanee, IN 46550	application
		Lat. 41°26'24" Long. 86°00'00"	
	2	Nature of business is	"
		porcelain enamel application	
		& paint application	
	3	Products produced are	"
		steel parts either painted	
		or covered w/ porcelain	Part A
	4	uncoated steel parts	
		porcelain	
		paint	
1	5	This facility has had a	Part A
		history of non-compliance	Enforcement
2		had they operated a waste-pile	file
		treatment unit that was	
		closed on ~~1985~~ April 10, 1985	
3		They changed ownership & did	
		not comply w/ 40 CFR 270.72	
	6	Awaiting new Part A. Part B	Part A
		yet to be called in	

TPS-15 (06/13/86)

Facility _____

I.D. No. _____

Page No. C.

SUBJECT C. ENVIRONMENTAL SETTING, HYDROLOGICAL AND GEOLOGICAL CHARACTERISTICS

Category	Description	Category	Description
1	GEOLOGY	7	SOIL DATA
2	WELL LOCATION/CONSTRUCTION ON-SITE	8	ATMOSPHERIC DATA
3	WELL LOCATION/CONSTRUCTION OFF-SITE	9	PHOTOGRAPHS/MAPS
4	GROUNDWATER MONITORING DATA	10	OTHER
5	SURFACE WATER/FLOW DATA & ANALYSIS	11	
6	FLOODPLAIN DATA	12	

ITEM	CATEGORY	DESCRIPTION/DATES/COMMENTS	LOCATION OF INFORMATION
	1	not reported; in Part B	
	2	none	
	3	domestic well w/in 1/4 mile of facility	Part A
	4	none	
	5	none	
	6	none	
	7	none	
	8	none	
	9	Photo's of facility were taken by Greg Weber on VSI 2-4-87	RFA file

TPS-16 (06/13/86)

Facility Vitco

I.D. No.

Page No. D.

SUBJECT D. WASTE CHARACTERIZATION

Category	Description	Category	Description
1	SOLID WASTES - RCRA IDENTIFIED	4	WASTES - STATE IDENTIFIED
1a	Description/Constituents	4a	Description/Constituents
1b	Amounts placed/spilled - Date	4b	Amounts placed/released
2	SOLID WASTES-ENFORCEMENT IDENTIFIED	5	INSPECTIONS
2a	Description/Constituents	6	STATE PERMITS
2b	Amounts placed/released	7	WASTES - PUBLIC IDENTIFIED
3	SOLID WASTES-CERCLA IDENTIFIED	8	WASTES - OTHER IDENTIFIED
3a	Description/Constituents	9	OTHER
3b	Amounts placed/released		

ITEM	CATEGORY	UNIT/ SPILL	DESCRIPTION/DATES/COMMENTS	LOCATION OF INFORMATION
	1	#2	Treatment Bin	Part A
	1a		D005 (Ba) & D006 (Cd)	"
	1b		F003 (Xylene)	"
	1b		D005 (186 ton/year)	"
			D006 combined w/above	"
			F003 unknown	"
			no spills ever reported	
	5		RFA inspection 11/8	RFA file
			2-11-87 by Greg	
			Weber indicates that	
			closure is complete &	
			wastes no longer treated	
			but are removed from	
			site to a facility	
			w/a IND number	

TPS-17 (06/13/86)

Facility Vitco

I.D. No.

Page No. E.

SUBJECT E. UNIT/SPILL SPECIFIC INFORMATION

UNIT/SPILL: Treatment Bin

Category	Description	Category	Description
1	ENGINEERING DESCRIPTION/PHOTOGRAPHS	6	RCRA INSPECTIONS
2	WASTES	7	PUBLIC SUPPLIED INFORMATION
3	OPERATIONAL STATUS/DATES OF USAGE	8	LOCATION
4	PERMITS	9	OTHER
5	ADEQUACY TO PREVENT RELEASES		

ITEM	CATEGORY	DESCRIPTION/DATES/COMMENTS	LOCATION OF INFORMATION
	1	None given / Photos taken	RFA
		during G.W. 2-11-87 VSI	file
	2	EP Toxic (D005, D006)	" & Part A
		Paint Waste	
	3	Closed as of 4-10-85	Part A
	4	submitted Part A	Part A
	5	closed, no further info	
	6	RFA inspection of 2-11-87 by G.W.	RFA file
	7	none	
	8	inside container, Hanna & Stockroom	Part A

Facility Vitco

I.D. No.

Page No. E.

SUBJECT E. UNIT/SPILL SPECIFIC INFORMATION

UNIT/SPILL: Waste Water Treatment

Category	Description	Category	Description
1	ENGINEERING DESCRIPTION/PHOTOGRAPHS	6	RCRA INSPECTIONS
2	WASTES	7	PUBLIC SUPPLIED INFORMATION
3	OPERATIONAL STATUS/DATES OF USAGE	8	LOCATION
4	PERMITS	9	OTHER
5	ADEQUACY TO PREVENT RELEASES		

ITEM	CATEGORY	DESCRIPTION/DATES/COMMENTS	LOCATION OF INFORMATION
		No - info - mentioned as	RFA file
		a SWMU in RFA	

TPS-18 (06/13/86)

Facility Vitco

I.D. No.

Page No. E.

SUBJECT E. UNIT/SPILL SPECIFIC INFORMATION

UNIT/SPILL: Container Storage

Category	Description	Category	Description
1	ENGINEERING DESCRIPTION/PHOTOGRAPHS	6	RCRA INSPECTIONS
2	WASTES	7	PUBLIC SUPPLIED INFORMATION
3	OPERATIONAL STATUS/DATES OF USAGE	8	LOCATION
4	PERMITS	9	OTHER
5	ADEQUACY TO PREVENT RELEASES		

ITEM	CATEGORY	DESCRIPTION/DATES/COMMENTS	LOCATION OF INFORMATION
		No Info - mentioned as SWMU in RFA	RFA file

Facility Vitco

I.D. No.

Page No. F.

SUBJECT F. KNOWN & SUSPECTED RELEASES & EXPOSURE POTENTIAL

Category	Description	Category	Description
1	GROUNDWATER	5	CONTAMINATED SOLIDS DISPERSION
1a	Actual releases	5a	Actual releases
1b	Potential releases	5b	Potential releases
1c	Pathways	5c	Pathways
1d	Potential/actual Exposure (human)	5d	Potential/actual Exposure (human)
1e	Activities affected by a release	5e	Activities affected by a release
2	SURFACE WATER	6	TRANSPORTATION RELATED
2a	Actual releases	6a	Actual releases
2b	Potential releases	6b	Potential releases
2c	Pathways	6c	Pathways
2d	Potential/actual Exposure (human)	6d	Potential/actual Exposure (human)
2e	Activities affected by a release	6e	Activities affected by a release
3	AIR	7	FOOD CHAIN CROPS
3a	Actual releases	7a	Actual releases
3b	Potential releases	7b	Potential releases
3c	Pathways	7c	Pathways
3d	Potential/actual Exposure (human)	7d	Potential/actual Exposure (human)
3e	Activities affected by a release	7e	Activities affected by a release
4	SUBSURFACE GAS	8	PUBLIC COMPLAINTS/CONCERNS
4a	Actual releases	9	OTHER
4b	Potential releases		
4c	Pathways		
4d	Potential/actual Exposure (human)		
4e	Activities affected by a release		

ITEM	CATEGORY	UNIT/ SPILL	DESCRIPTION/DATES/COMMENTS	LOCATION OF INFORMATION
			no info in any file on this information	

TPS-19 (06/13/86)